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PROJECT APOLLO

TASK MSC/TRW A-105

NAVIGATION ANALYSIS STUDY CSM ACTIVE RENDEZVOUS

20 NOVEMBER 1967

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

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NAS 9-4810

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ABSTRACT

This report is submitted to NASA/MSC by TRW Systems in fulfillment of Task MSC/TRW A-105, Subtask 4, of the Apollo Mission Trajectory Control Program, Contract NAS 9-4810. This document describes the results of Monte Carlo analyses performed during a Navigation Analysis Study under Subtask A-105.4. The results indicate that the incorporation of a ranging device on the CSM greatly reduces expected target misses. Also, the sextant can be better utilized if the weighting matrix used for combining estimates is not reinitialized.

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1. INTRODUCTION AND SUMMARY

The results of the Navigation Analysis Study performed under Subtask A-105.4 are presented in this document. The effects of different kinds of tracking, amount of tracking, and incorporation of tracking on a typical earth orbit rendezvous were evaluated. The assumptions made in performing the analysis are contained in Reference 1. A brief description of the method used in performing the analysis is contained herein.

A total of 17 cases were run, using a Monte Carlo simulation of the proposed rendezvous sequence. Using statistics of position miss at distance of closest approach and at the nominal rendezvous time as obtained from the TRW Statistical Processor described in Reference 2, the following summary was compiled:

a) Fixed time statistics show pessimistic miss distances when compared with distance of closest approach statistics.

b) The addition of range tracking greatly reduces miss distances if the onboard "canned" matrix is used for weighting purposes.

c) Sextant tracking can be better utilized by using the "fit world" matrix associated with the previous estimate for weighting purposes.

2. APPROACH TO THE PROBLEM

2.1 INTRODUCTION

This subtask provides error analyses to determine the navigation characteristics for the terminal rendezvous sequence for the first phase of the AS-258 mission. The AS-258 mission is an earth orbital mission with a CSM active rendezvous. (Figure 1 illustrates the mission profile.) The initial height differential between the CSM and LM is nominally 10 nautical miles. A terminal phase initiation burn (TPI) and midcourse correction burn (MCC) are to be employed to match the positions of the CSM and LM at a fixed time in the following manner. The TPI burn is determined using the estimated state vector of the CSM and targeting for the estimated state vector of the LM. A MCC is then made to null the remaining errors using a new updated estimated state vector of the CSM with identical targeting. At the fixed rendezvous time, a terminal phase final burn (TPF) is initiated to match velocities and effect the desired rendezvous. The tracking requirements necessary for these maneuvers were studied. In particular, the following areas were investigated:

a) Effects of varying amounts of sextant and range tracking prior to the MCC assuming 18 pre-TPI marks. (A mark is defined as one set of angle measurements or one set of angle measurements and one range measurement at a particular time depending upon the type of tracking simulated. The 0, 3, 6, 9, and 12 mark cases prior to the MCC were considered.)

b) Evaluation of weighting matrix (W) reinitialization. (The two cases considered will be those of W = diagonal "canned" matrix, and W = updated "fit world" covariance matrix.)

2.2 METHOD

The method used to perform the analysis was to model the first period of activities of the AS-258 trajectory using the existing TAPP VI driver routines and necessary prop boxes. The details of the modeling

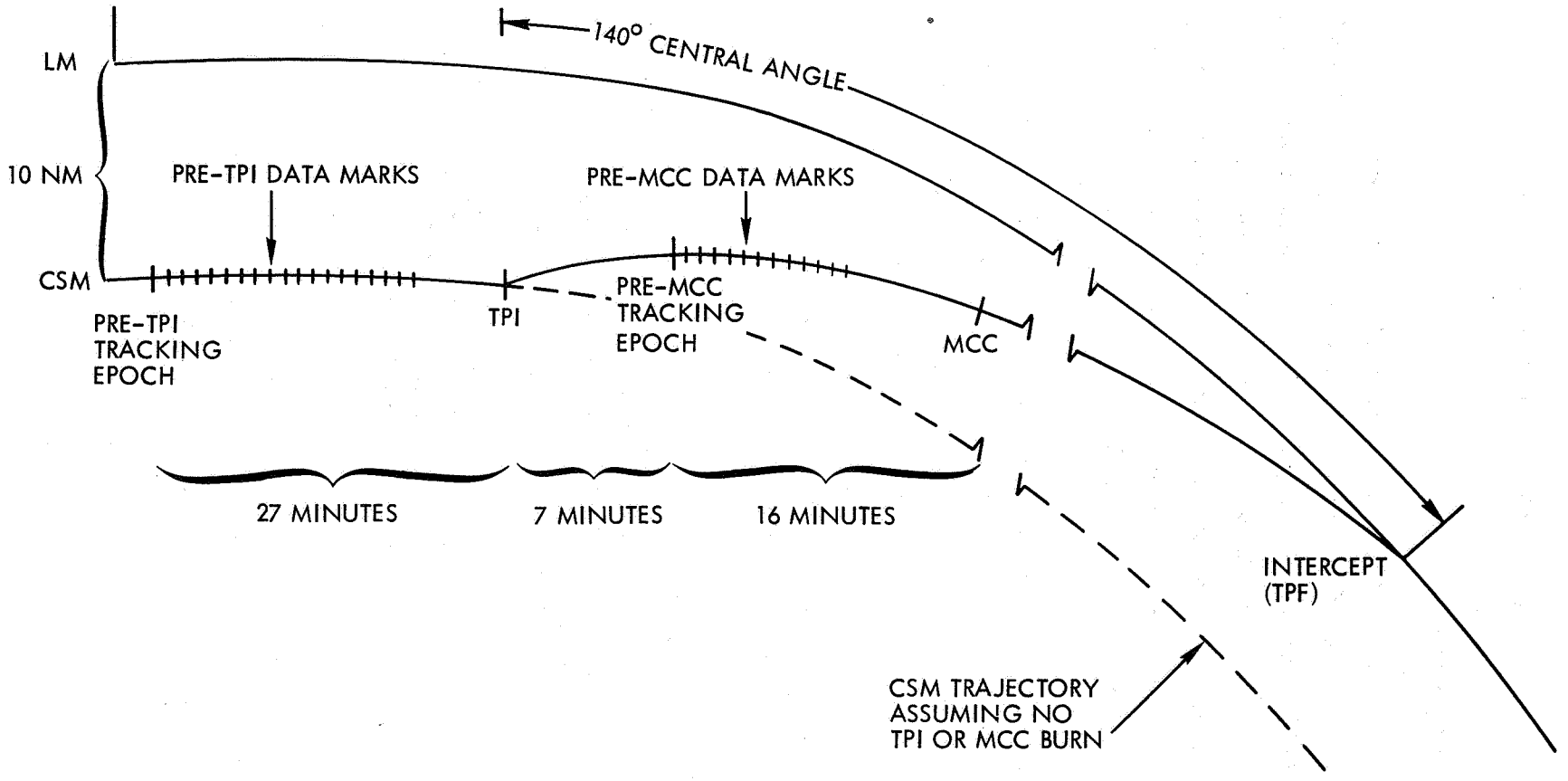

Figure 1. Mission Profile

procedures and assumptions made are included in Reference 2; however, for completeness, the following brief description is included in this report:

a) Initialize - Add Pre-TPI Tracking - Form an estimated state vector for the CSM by combining the previous estimate of the CSM with 18 marks of sextant or sextant and range tracking using a diagonal "canned" weighting matrix.* Set the actual state vector for the CSM to its nominal value. Set the LM actual and estimated state vectors to the nominal value.

b) TPI - Propagate the actual and estimated state vectors for both the CSM and LM to TPI time; determine the TPI maneuver using the estimated state vectors; and execute the maneuver assuming no execution errors.

c) Pre-MCC Tracking - Propagate the actual and estimated state vectors for both the CSM and LM to the pre-MCC tracking epoch and form a new CSM estimate using the four separate methods presented below depending on the case being simulated. Only one method is used per TAPP VI case.

   1) Weight in the previous estimate using the onboard "canned" matrix and assume sextant tracking. Consider the 0, 3, 6, 9, and 12 pre-MCC mark cases. (0 marks imply that the old estimate will be used.)

   2) Weight in the previous estimate, using its updated "fit world" covariance matrix and assume sextant tracking. Consider the 3, 6, 9, and 12 pre-MCC mark cases.

   3) Weight in the previous estimate, using the onboard "canned" matrix and assume sextant and range tracking. Consider the 0, 3, 6, 9, and 12 pre-MCC mark cases.

   4) Weight in the previous estimate, using its updated "fit world" covariance matrix and assume sextant and range tracking. Consider the 3, 6, and 9 pre-MCC mark cases.

d) MCC - Propagate the actual and estimated state vectors for both the CSM and LM to MCC time, determine the MCC maneuver, using estimated state vectors, and execute the maneuver assuming no execution errors.

---

*In forming a state vector update noise, sextant biases, and platform misalignment and drift effects are considered as causing an error in the estimate.

e) One Nautical Mile Relative Range, DCA, TPF - Propagate the actual and estimated state vectors to the following times:

1) When the relative range between the two vehicles is one nautical mile

2) When the vehicles are at distance of closest approach

3) When the vehicles are at the distance of closest approach assuming nominal trajectories, i.e., terminal phase final (TPF).

f) Trajectory Parameter History - Using the actual trajectories for both the CSM and LM, compute the relative range, relative range rate, inertial inplane angle rate, inertial inplane angle, and out-of-plane angle at 30-second intervals from TPI to TPI plus 40 minutes.

Each case was run using 100 Monte Carlo samples. The results were then statistically processed using the PROC Program.

2.3 STATISTICS USED IN THE ANALYSIS

The following statistics were used in the analysis:

1σ noise value sextant inplane angle	0.2 mr
1σ noise value sextant out-of-plane angle	0.2 mr
1σ noise uhf range (pre-TPI tracking)	10 ft
1σ noise uhf range (pre-MCC tracking)	7 ft
1σ bias value sextant inplane angle	0.2 mr
1σ bias value sextant out-of-plane angle	0.2 mr
1σ bias value platform misalignment $(\theta_1, \theta_2, \theta_3)$	0.2 mr
1σ bias value platform drift $(\dot{\theta}_1, \dot{\theta}_2, \dot{\theta}_3)$	0.145E-3 mr/sec
1σ bias value uhf range	1 ft

3. DISCUSSION AND SUMMARY OF RESULTS

The following discussion draws heavily from Tables 1a through 1d, which illustrate the effects of the various tracking procedures on miss distances and miss velocities at both DCA and TPF, in addition to the shift in rendezvous time. For all comparisons, 95 percentile values are used.

Comparing cases 1 and 10, if no additional data are to be taken prior to performing the MCC, i. e., the old estimate is to be used. Sextant tracking only produces smaller position and velocity misses than sextant and range tracking at distance of closest approach. Sextant and range tracking does, however, give slightly better results at the nominal rendezvous time.

When new data are taken after TPI, however, and the old estimate is weighted in with the onboard "canned" covariance matrix, the addition of range tracking greatly reduces the position and velocity misses for comparable cases (compare cases 2 and 11, 3 and 12, etc.). The above statement is true whether distance of closest approach or fixed time statistics are examined.

The biggest differences are reflected in the fixed time comparisons, which indicate the ability to get to the target much closer to the desired time when employing range tracking. If a fixed time TPF maneuver is to be made, the sextant tracking can be better utilized by holding over the previous "fit world" covariance matrix for weighting purposes (compare cases 3 and 7, 4 and 8, 5 and 9).

A factor of two improvement is noted when position miss is examined for comparable cases as noted above when taking 6, 9, and 12 marks. It is worthy to note that when employing the above procedure, i. e., carrying over the covariance matrix for weighting purposes, more tracking results in smaller target misses. When the onboard "canned" matrix is used taking 6 marks produces larger misses than 3 marks. Updating the old covariance matrix for weighting purposes when sextant and range tracking are employed produces worse results than using the onboard

"canned" matrix assuming that 6 or 9 marks are taken and position and velocity misses are the criteria (compare cases 12 and 15 and cases 13 and 16).

The above may be summarized as follows:

a) Fixed time statistics show pessimistic miss distances. (Distance of closest approach misses are smaller by as much as a factor of five, depending upon the number of marks and kinds of tracking considered for the MCC.)

b) If no additional tracking is to be taken after TPI for the MCC, sextant tracking produces smaller misses at DCA, but slightly larger misses at TPF.

c) The addition of range tracking after TPI greatly reduces miss distances if the onboard "canned" matrix is used for weighting.

d) Sextant tracking can be better utilized by carrying over the "fit world" matrix for weighting purposes.

4. RESULTS

Because of the large number of cases considered (17) and the number and nature of the outputs desired, the results of the study are presented in this section. Tables 1a through 1d consist of sets of statistics in the form of mean, standard deviation, and 95 percentile values for a select group of output parameters:

a) Delta velocity required for the TPI maneuver

b) Delta velocity required for the MCC maneuver

c) Position miss at distance of closest approach, DCA

d) Velocity miss at distance of closest approach, DCA

e) Position miss at the nominal rendezvous time, TPF

f) Velocity miss at the nominal rendezvous time, TPF

g) Time difference between the time of distance of closest approach (DCA) and the nominal rendezvous time (TPF).

Section 4.2 contains the normalized covariance matrices (Tables 2 through 20, pages 17 through 35) of uncertainty and summaries of these matrices for the CSM* at select points on the trajectory for all cases considered. The following are select points of interest:

a) Pre-TPI tracking epoch (before tracking)**

b) Pre-TPI tracking epoch (after tracking)

c) TPI

d) Pre-MCC tracking epoch (before tracking)

e) Pre-MCC tracking epoch (after tracking)

---

*Since the LM trajectory is assumed to be nominal, these matrices describe the relative state vector uncertainty.

**MSC provided TRW with an initialization covariance matrix of uncertainty for the CSM. Since the above matrices for cases 1 through 9 (sextant tracking) and cases 10 through 17 (sextant and range tracking) are the same up to and including pre-MCC tracking epoch (before tracking), they are given only once.

f) MCC

g) 1NM

h) DCA

Section 4.3 contains plots (Figures 2 through 96, pages 36 through 130) of relative range rate, relative range, inertial inplane line-of-sight rate, inertial inplane angle, and out-of-plane angle as functions of time from TPI to TPI plus 40 minutes for each of the cases considered. For cases 1 through 9 (sextant tracking) and cases 10 through 17 (sextant and range tracking) one set of plots describes the parameter history from TPI to MCC. Because of the sensitivity of the angles and angular rate near distance of closest approach, the scales on these plots have been chosen to present the majority of the information with reasonable determination. Keys to assist in using the information in these sections are included at the first of each section. The tracking statistic inputs, i.e., noise sigmas, bias sigmas, etc., used in this analysis are given in Section 2.3.

4.1 EFFECTS OF TRACKING PROCEDURES

Tables 1a through 1d are for the most part self-explanatory. The parameters and appropriate units are shown vertically to the left of the table. The cases are labeled and numbered horizontally at the top of the table. The following abbreviations are used:

A	Sextant tracking
A, R	Sextant and range tracking
0, 3, 6, 9, 12	Number of marks
W = D	Weighting old estimate using diagonal "canned" onboard matrix
W ≠ D	Weighting old estimate using non-diagonal "fit world" covariance matrix
ΔV TPI	Delta velocity used for TPI maneuver
ΔV MCC	Delta velocity used for MCC maneuver
$T_{DCA-P} - T_{DCA-N}$	Delta time reflecting the difference between time of distance of closest approach (DCA) and the nominal rendezvous (TPF) time.

DCA Miss (Position), DCA Miss (Velocity), $TPF_{NOMINAL}$ Miss (Position), and $TPF_{NOMINAL}$ Miss (Velocity) exhibit the differences in the actual state vectors for the LM and CSM at DCA and at the fixed rendezvous time, respectively.

4.2 COVARIANCE MATRICES OF STATE VECTOR UNCERTAINTIES

This section contains the normalized covariance matrices of uncertainty and summaries of these matrices for the relative state at select points on the trajectory (Tables 2 through 20, pages 17 through 35). The normalized covariance matrices have standard deviations along the diagonal with correlation coefficients off the diagonal. The units in this section are feet and feet per second. The coordinate system chosen for the covariance matrices is the standard UVW system with one axis radial, the second axis normal to the trajectory plane with the third axis completing a normal right-handed system. The CSM actual state vector was used to determine this system.

4.3 HISTORY OF PARAMETERS

This section contains plots (Figures 2 through 96, pages 36 through 130) of the following parameters as a function of time:

	Parameter	Abbreviation
a)	Relative range rate	RHODOT
b)	Relative range	RHO
c)	Inertial inplane line-of-sight rate	PHIDOT
d)	Inertial inplane angle	PHI
e)	Out-of-plane angle	THETA

All of the above have been computed using the actual trajectories for the LM and CSM. Five plots are shown per frame and include:

Parameter	Symbol
a) Mean	*
b) Mean plus 1 standard deviation	0
c) Mean minus 1 standard deviation	0
d) Largest sample	+
e) Smallest sample	+

Times associated with particular events are referenced to CSM liftoff in seconds and are as follows:

TPI	92,460.0
MCC	93,840.0
TPF	94,533.593

Table 1a. Summary of Results - Angles; Weighting = Diagonal

Parameters \ Cases		(1) A W=D 0	(2) A W=D 3	(3) A W=D 6	(4) A W=D 9	(5) A W=D 12
ΔV TPI	M	21.37	21.22	21.22	21.22	21.22
ft/sec	SD	.69	.59	.59	.59	.59
	95%	22.34	22.31	22.31	22.31	22.31
ΔV MCC	M	.01	3.57	4.75	4.23	4.11
ft/sec	SD	.01	2.26	3.04	2.85	2.80
	95%	.02	8.02	10.18	8.89	8.95
DCA MISS	M	1000.	333.	282.	140.	96.6
POSITION	SD	889.	188.	266.	94.2	61.1
ft	95%	2394.	717.	956.	278.	210.
DCA MISS	M	24.36	24.34	24.59	24.70	24.75
VELOCITY	SD	3.60	2.52	4.34	2.41	1.75
ft/sec	95%	30.10	28.40	31.58	28.30	27.42
$TPF_{NOMINAL}$	M	3322.	1613.	1998.	891.	419.
MISS(POSITION)	SD	2391.	999.	1532.	665.	299.
ft	95%	7639.	3511.	5183.	2189.	916.
$TPF_{NOMINAL}$	M	23.98	24.35	24.63	24.72	24.75
MISS(VELOCITY)	SD	4.13	2.54	4.40	2.41	1.75
ft/sec	95%	30.16	28.47	31.73	28.30	27.42
$T_{DCA-P}-T_{DCA-N}$	M	41.8	18.2	23.1	4.83	1.31
sec	SD	182.	77.2	119.	46.4	20.6
	95%	410.	146.	312.	102.	40.0

Table 1b. Summary of Results - Angles; Weighting = Nondiagonal

Parameters \ Cases		(6) A W‡D 3	(7) A W‡D 6	(8) A W‡D 9	(9) A W‡D 12
ΔV TPI	M	21.22	21.22	21.22	21.22
ft/sec	SD	.59	.59	.59	.59
	95%	22.31	22.31	22.31	22.31
ΔV MCC	M	3.09	3.47	3.80	3.93
ft/sec	SD	2.16	2.50	2.73	2.80
	95%	7.23	8.01	8.81	9.02
DCA MISS	M	322.	237.	177.	126.
POSITION	SD	203.	132.	107.	77.1
ft	95%	743.	459.	340.	262.
DCA MISS	M	24.29	24.49	24.64	24.70
VELOCITY	SD	2.14	1.43	1.36	1.44
ft/sec	95%	28.45	26.87	26.82	27.07
$TPF_{NOMINAL}$	M	1544.	924.	485.	300.
MISS(POSITION)	SD	1061.	588.	277.	163.
ft	95%	3429.	2151.	1021.	605.
$TPF_{NOMINAL}$	M	24.28	24.50	24.65	24.70
MISS(VELOCITY)	SD	2.16	1.43	1.36	1.44
ft/sec	95%	28.46	26.87	26.82	27.07
$T_{DCA-P}-T_{DCA-N}$	M	18.98	8.71	3.45	1.83
sec	SD	75.12	42.79	20.89	12.41
	95%	152.8	83.01	39.57	21.48

Table 1c. Summary of Results - Angles and Range; Weighting = Diagonal

Parameters \ Cases		(10) A, R W=D 0	(11) A, R W=D 3	(12) A, R W=D 6	(13) A, R W=D 9	(14) A, R W=D 12
ΔV TPI	M	21.50	21.45	21.45	21.45	21.45
ft/sec	SD	.52	.58	.58	.58	.58
	95%	22.48	22.56	22.56	22.56	22.56
ΔV MCC	M	.01	4.21	4.31	4.38	4.43
ft/sec	SD	.01	3.18	3.32	3.37	3.41
	95%	.02	11.38	11.78	11.97	12.10
DCA MISS	M	1426.	261.	123.	88.5	70.3
POSITION	SD	1084.	144.	65.9	54.0	43.0
ft	95%	3840.	547.	263.	215.	174.
DCA MISS	M	24.88	24.44	24.42	24.41	24.40
VELOCITY	SD	2.87	1.20	1.21	1.32	1.41
ft/sec	95%	30.47	26.80	26.66	26.93	27.11
$TPF_{NOMINAL}$	M	2844.	482.	258.	180.	128.
MISS(POSITION)	SD	2083.	269.	156.	110.	76.8
ft	95%	7526.	909.	582.	415.	303.
$TPF_{NOMINAL}$	M	24.58	24.44	24.42	24.41	24.40
MISS(VELOCITY)	SD	2.90	1.20	1.21	1.32	1.41
ft/sec	95%	29.74	26.80	26.66	26.93	27.11
$T_{DCA-P}-T_{DCA-N}$	M	4.33	-1.19	-1.02	-.78	-.55
sec	SD	127.	19.0	11.0	7.63	5.18
	95%	257.	29.7	16.8	10.4	6.69

Table 1d. Summary of Results - Angles and Range; Weighting = Nondiagonal

Parameters \ Cases		(15) A, R W≠D 3	(16) A, R W≠D 6	(17) A, R W≠D 9
ΔV TPI	M	21.45	21.45	21.45
ft/sec	SD	.58	.58	.58
	95%	22.56	22.56	22.56
ΔV MCC	M	4.50	4.58	4.61
ft/sec	SD	3.48	3.55	3.57
	95%	12.38	12.60	12.66
DCA MISS	M	227.	202.	174.
POSITION	SD	123.	119.	107.
ft	95%	402.	379.	323.
DCA MISS	M	24.32	24.33	24.33
VELOCITY	SD	2.04	2.12	2.12
ft/sec	95%	28.05	28.19	28.20
$TPF_{NOMINAL}$	M	297.	307.	290.
MISS(POSITION)	SD	157.	173.	170.
ft	95%	658.	721.	709.
$TPF_{NOMINAL}$	M	24.33	24.33	24.33
MISS(VELOCITY)	SD	2.04	2.12	2.12
ft/sec	95%	28.06	28.19	28.21
$T_{DCA-P}-T_{DCA-N}$	M	1.87	1.92	1.84
sec	SD	9.28	11.40	11.54
	95%	23.04	26.28	25.80

Table 2. Angles

TPI TRACKING EPOCH - BEFORE TRACKING

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	7.6936557D 02	3.3851348D-01	-2.2031386D-01	-2.2227386D-01	-9.2704939D-01	-2.0063678D-01
2	3.3851348D-01	7.2416532D 03	-6.9919249D-02	-9.9232705D-01	-6.3085003D-01	-8.1792934D-02
3	-2.2031386D-01	-6.9919249D-02	9.4608471D 02	4.5894192D-02	1.7125695D-01	9.7720316D-01
4	-2.2227386D-01	-9.9232705D-01	4.5894192D-02	8.6199887D 00	5.3362912D-01	6.0092930D-02
5	-9.2704939D-01	-6.3085003D-01	1.7125695D-01	5.3362912D-01	1.1497212D 00	1.6469423D-01
6	-2.0063678D-01	-8.1792934D-02	9.7720316D-01	6.0092930D-02	1.6469423D-01	1.3055192D 00

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	1.9208142D 03
MEAN MAGNITUDE OF VELOCITY =	2.3521104D 00
RST OF POSITION =	7.3436054D 03
RST OF VELOCITY =	8.7937730D 00

TPI TRACKING EPOCH - AFTER TRACKING

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.5664326D 03	9.9355423D-01	1.8445921D-01	-9.9220334D-01	-9.9347857D-01	1.1394198D-01
2	9.9355423D-01	7.0948762D 03	1.7823639D-01	-9.9984232D-01	-9.7885145D-01	1.1810827D-01
3	1.8445921D-01	1.7823639D-01	2.2139591D 02	-1.7680630D-01	-1.9583054D-01	1.1261787D-02
4	-9.9220334D-01	-9.9984232D-01	-1.7680630D-01	8.4434260D 00	9.7975648D-01	-1.1903238D-01
5	-9.9347857D-01	-9.7885145D-01	-1.9583054D-01	9.7975648D-01	9.6031556D-01	-9.8500508D-02
6	1.1394198D-01	1.1810827D-01	1.1261787D-02	-1.1903238D-01	-9.8500508D-02	1.8758444D-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	1.9433451D 03
MEAN MAGNITUDE OF VELOCITY =	2.2897721D 00
RST OF POSITION =	7.2691059D 03
RST OF VELOCITY =	8.4999316D 00

TPI

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.5045163D 03	9.8622235D-01	3.5247598D-02	-9.7926434D-01	-9.9705269D-01	-1.9795553D-01
2	9.8622235D-01	2.7169406D 03	3.5405457D-02	-9.9747310D-01	-9.9369038D-01	-1.8748873D-01
3	3.5247598D-02	3.5405457D-02	1.6620047D 02	-2.4148957D-02	-3.5556500D-02	2.0978354D-01
4	-9.7926434D-01	-9.9747310D-01	-2.4148957D-02	3.2454207D 00	9.8654146D-01	1.9412996D-01
5	-9.9705269D-01	-9.9369038D-01	-3.5556500D-02	9.8654146D-01	8.7198139D-01	1.9918692D-01
6	-1.9795553D-01	-1.8748873D-01	2.0978354D-01	1.9412996D-01	1.9918692D-01	2.5555967D-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	8.6124737D 02
MEAN MAGNITUDE OF VELOCITY =	8.6811544D-01
RST OF POSITION =	3.1101388D 03
RST OF VELOCITY =	3.3702252D 00

MCC TRACKING EPOCH - BEFORE TRACKING

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.5097157D 03	9.4862866D-01	-6.5883388D-02	-9.1609191D-01	-9.9562204D-01	-2.1024642D-01
2	9.4862866D-01	1.6296766D 03	-7.1117462D-02	-9.9426141D-01	-9.4641820D-01	-1.9401124D-01
3	-6.5883388D-02	-7.1117462D-02	1.9556264D 02	8.7364191D-02	5.4725177D-02	3.2493989D-01
4	-9.1609191D-01	-9.9426141D-01	8.7364191D-02	1.9675487D 00	9.9944221D-01	1.9433404D-01
5	-9.9562204D-01	-9.4641820D-01	5.4725177D-02	9.9944221D-01	8.7971448D-01	2.0730514D-01
6	-2.1024642D-01	-1.9401124D-01	3.2493989D-01	1.9433404D-01	2.0730514D-01	2.2458646D-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	6.1290260D 02
MEAN MAGNITUDE OF VELOCITY =	5.1651204D-01
RST OF POSITION =	2.2300969D 03
RST OF VELOCITY =	2.1669297D 00

Table 3. Angles and Range

TPI TRACKING EPOCH - BEFORE TRACKING

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	7.6936557D 02	3.3851348D-01	-2.2031386D-01	-2.2227386D-01	-9.2704939D-01	-2.0063678D-01
2	3.3851348D-01	7.2416532D 03	-6.9919249D-02	-9.9232705D-01	-6.3085003D-01	-8.1792934D-02
3	-2.2031386D-01	-6.9919249D-02	9.4608471D 02	4.5894192D-02	1.7125695D-01	9.7720316D-01
4	-2.2227386D-01	-9.9232705D-01	4.5894192D-02	8.6199887D 00	5.3362912D-01	6.0092930D-02
5	-9.2704939D-01	-6.3085003D-01	1.7125695D-01	5.3362912D-01	1.1497212D 00	1.6469423D-01
6	-2.0063678D-01	-8.1792934D-02	9.7720316D-01	6.0092930D-02	1.6469423D-01	1.3055192D 00

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION	=	1.9208142D 03
MEAN MAGNITUDE OF VELOCITY	=	2.3521104D 00
RST OF POSITION	=	7.3436054D 03
RST OF VELOCITY	=	8.7937730D 00

TPI TRACKING EPOCH - AFTER TRACKING

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.9120586D 02	-9.8204921D-01	8.5425203D-02	-9.9846997D-01	9.8904266D-01	1.0450355D-02
2	-9.8204921D-01	2.4782506D 01	-7.7346827D-02	9.7397096D-01	-9.9447779D-01	1.0975768D-02
3	8.5425203D-02	-7.7346827D-02	2.1530007D 02	-8.0321963D-02	7.3239545D-02	3.5055222D-03
4	-9.9846997D-01	9.7397096D-01	-8.0321963D-02	2.1912459D-01	-9.8085212D-01	-1.4265542D-02
5	9.8904266D-01	-9.9447779D-01	7.3239545D-02	-9.8085212D-01	1.0102028D-01	-1.0270703D-02
6	1.0450355D-02	1.0975768D-02	3.5055222D-03	-1.4265542D-02	-1.0270703D-02	1.9207827D-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION	=	1.2651115D 01
MEAN MAGNITUDE OF VELOCITY	=	7.5378805D-03
RST OF POSITION	=	2.8901206D 02
RST OF VELOCITY	=	3.0840678D-01

TPI

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	4.8028381D 02	-9.9905135D-01	-3.5639579D-02	9.9998160D-01	-9.9880815D-01	-7.8973002D-02
2	-9.9905135D-01	3.7849086D 02	3.9577952D-02	-9.9924666D-01	9.9977637D-01	8.3396968D-02
3	-3.5639579D-02	3.9577952D-02	1.6897900D 02	-3.6080702D-02	4.0037531D-02	1.8245380D-01
4	9.9998160D-01	-9.9924666D-01	-3.6080702D-02	9.3424867D-01	-9.9893661D-01	-8.0489652D-02
5	-9.9880815D-01	9.9977637D-01	4.0037531D-02	-9.9893661D-01	2.4277261D-01	7.7547514D-02
6	-7.8973002D-02	8.3396968D-02	1.8245380D-01	-8.0489652D-02	7.7547514D-02	2.4892733D-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION	=	1.8127801D 01
MEAN MAGNITUDE OF VELOCITY	=	2.5344244D-02
RST OF POSITION	=	6.3441451D 02
RST OF VELOCITY	=	9.9685703D-01

MCC TRACKING EPOCH - BEFORE TRACKING

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	6.8484571D 02	-9.9944720D-01	-6.7404269D-02	9.9995019D-01	-9.9986640D-01	-6.2709361D-02
2	-9.9944720D-01	8.2142252D 02	7.0796758D-02	-9.9971939D-01	9.9981405D-01	6.3404202D-02
3	-6.7404269D-02	7.0796758D-02	1.9378287D 02	-6.8783290D-02	6.8094088D-02	2.7777482D-01
4	9.9995019D-01	-9.9971939D-01	-6.8783290D-02	1.4394632D 00	-9.9994765D-01	-6.3631752D-02
5	-9.9986640D-01	9.9981405D-01	6.8094088D-02	-9.9994765D-01	4.8485061D-01	6.1192056D-02
6	-6.2709361D-02	6.3404202D-02	2.7777482D-01	-6.3631752D-02	6.1192056D-02	2.2216546D-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION	=	2.8119541D 01
MEAN MAGNITUDE OF VELOCITY	=	3.3732213D-02
RST OF POSITION	=	1.0868764D 03
RST OF VELOCITY	=	1.5350869D 00

Table 4. 0 Angles, W = D

MCC

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.81984320 03	-8.92685580-01	-1.15371440-01	8.78401280-01	-9.93700550-01	-2.57494370-01
2	-8.92685580-01	1.49212810 03	8.56925480-02	-9.97677530-01	9.30858910-01	2.09863160-01
3	-1.15371440-01	8.56925480-02	2.17784350 02	-9.05657510-02	1.04940780-01	-3.84631250-02
4	8.78401280-01	-9.97677530-01	-9.05657510-02	1.80404170 00	-9.16165630-01	-1.97636830-01
5	-9.93700550-01	9.30858910-01	1.04940780-01	-9.16165630-01	1.12023720 00	2.59752220-01
6	-2.57494370-01	2.09863160-01	-3.84631250-02	-1.97636830-01	2.59752220-01	1.86272090-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION	=	2.01564770 02
MEAN MAGNITUDE OF VELOCITY	=	1.66710120-01
RST OF POSITION	=	2.36340970 03
RST OF VELOCITY	=	2.13171180 00

1NM

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.80669920 03	-9.32333590-01	-2.13864730-01	9.38103780-01	-9.94699020-01	-1.28241240-01
2	-9.32333590-01	3.21684770 03	1.83897240-01	-9.99030060-01	9.48409000-01	8.21647040-02
3	-2.13864730-01	1.83897240-01	1.99801850 02	-1.88456080-01	2.04875080-01	-1.94437980-01
4	9.38103780-01	-9.99030060-01	-1.88456080-01	3.74716040 00	-9.51807600-01	-7.43325850-02
5	-9.94699020-01	9.48409000-01	2.04875080-01	-9.51807600-01	1.10018270 00	1.35139810-01
6	-1.28241240-01	8.21647040-02	-1.94437980-01	-7.43325850-02	1.35139810-01	2.14741700-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION	=	5.97149750 02
MEAN MAGNITUDE OF VELOCITY	=	6.55632940-01
RST OF POSITION	=	3.69488730 03
RST OF VELOCITY	=	3.91123090 00

DCA

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.79225080 03	-9.59398450-01	-2.46968980-01	9.65026640-01	-9.96007740-01	-5.49989860-02
2	-9.59398450-01	4.33652990 03	2.00046060-01	-9.99223400-01	9.69740740-01	1.24700930-02
3	-2.46968980-01	2.00046060-01	1.90451090 02	-2.03428240-01	2.42039490-01	-1.78910690-01
4	9.65026640-01	-9.99223400-01	-2.03428240-01	5.04726750 00	-9.73373660-01	-7.40281550-03
5	-9.96007740-01	9.69740740-01	2.42039490-01	-9.73373660-01	1.07831570 00	6.29311270-02
6	-5.49989860-02	1.24700930-02	-1.78910690-01	-7.40281550-03	6.29311270-02	2.27315850-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION	=	8.76344940 02
MEAN MAGNITUDE OF VELOCITY	=	9.85406160-01
RST OF POSITION	=	4.69614230 03
RST OF VELOCITY	=	5.16617320 00

Table 5. 3 Angles, W = D

MCC TRACKING EPOCH - AFTER TRACKING

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.1955262D 03	9.9577406D-01	2.8000636D-01	-9.9432652D-01	-9.5482654D-01	2.8598547D-02
2	9.9577406D-01	1.5658455D 03	2.8476988D-01	-9.8930141D-01	-9.5626619D-01	3.0794905D-02
3	2.8000636D-01	2.8476988D-01	9.2304911D 01	-2.6923029D-01	-2.1380199D-01	-4.1147084D-01
4	-9.9432652D-01	-9.8930141D-01	-2.6923029D-01	2.1866803D 00	9.6377153D-01	-4.3035082D-02
5	-9.5482654D-01	-9.5626619D-01	-2.1380199D-01	9.6377153D-01	7.1371852D-01	-5.2850445D-02
6	2.8598547D-02	3.0794905D-02	-4.1147084D-01	-4.3035082D-02	-5.2850445D-02	2.3196663D-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 4.9294886D 02
MEAN MAGNITUDE OF VELOCITY = 5.9090534D-01
RST OF POSITION = 1.9722260D 03
RST OF VELOCITY = 2.3118766D 00

MCC

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.0255605D 03	-7.4021047D-01	6.4155503D-02	4.4660473D-01	-9.4270365D-01	-1.9961319D-01
2	-7.4021047D-01	2.6138834D 02	4.4890423D-02	-7.1520770D-01	8.7973478D-01	1.7787212D-01
3	6.4155503D-02	4.4890423D-02	1.6572759D 02	-8.5199567D-02	-3.5662000D-02	7.0269800D-01
4	4.4660473D-01	-7.1520770D-01	-8.5199567D-02	6.0739324D-01	-5.5824126D-01	-1.9134390D-01
5	-9.4270365D-01	8.7973478D-01	-3.5662000D-02	-5.5824126D-01	4.9758966D-01	1.9794060D-01
6	-1.9961319D-01	1.7787212D-01	7.0269800D-01	-1.9134390D-01	1.9794060D-01	1.6549822D-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 2.0541602D 02
MEAN MAGNITUDE OF VELOCITY = 1.0242234D-01
RST OF POSITION = 1.0712440D 03
RST OF VELOCITY = 8.0244108D-01

INM

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.0918737D 03	-9.6181399D-01	-4.0527654D-02	9.6544547D-01	-9.3697350D-01	-3.4320381D-01
2	-9.6181399D-01	1.0463613D 03	6.5003513D-02	-9.6751910D-01	9.5514892D-01	3.0059656D-01
3	-4.0527654D-02	6.5003513D-02	2.0001276D 02	-7.9283029D-02	7.4848473D-02	2.3666326D-01
4	9.6544547D-01	-9.6751910D-01	-7.9283029D-02	1.4835117D 00	-9.7932927D-01	-3.1586658D-01
5	-9.3697350D-01	9.5514892D-01	7.4848473D-02	-9.7932927D-01	9.4810100D-01	3.1983034D-01
6	-3.4320381D-01	3.0059656D-01	2.3666326D-01	-3.1586658D-01	3.1983034D-01	9.9542318D-02

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 3.2066277D 02
MEAN MAGNITUDE OF VELOCITY = 2.8986743D-01
RST OF POSITION = 1.5254722D 03
RST OF VELOCITY = 1.6014102D 00

DCA

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.1609721D 03	-9.6857005D-01	-8.3588408D-02	9.8711624D-01	-9.4367439D-01	-2.8489885D-01
2	-9.6857005D-01	1.5241259D 03	9.6609653D-02	-9.8657522D-01	9.4761996D-01	2.4025856D-01
3	-8.3588408D-02	9.6609653D-02	1.9856247D 02	-1.0220403D-01	1.1412755D-01	-3.2603896D-01
4	9.8711624D-01	-9.8657522D-01	-1.0220403D-01	2.0724497D 00	-9.7014358D-01	-2.4918572D-01
5	-9.4367439D-01	9.4761996D-01	1.1412755D-01	-9.7014358D-01	6.8182440D-01	2.4218911D-01
6	-2.8489885D-01	2.4025856D-01	-3.2603896D-01	-2.4918572D-01	2.4218911D-01	1.0343611D-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 4.2338710D 02
MEAN MAGNITUDE OF VELOCITY = 4.4636332D-01
RST OF POSITION = 1.9261991D 03
RST OF VELOCITY = 2.1841788D 00

Table 6. 6 Angles, W = D

MCC TRACKING EPOCH - AFTER TRACKING

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.1396506D 03	9.9542856D-01	2.8079167D-01	-9.9135162D-01	-7.8588070D-01	1.8436810D-01
2	9.9542856D-01	1.4886210D 03	2.8404048D-01	-9.8781934D-01	-7.8731131D-01	1.9086201D-01
3	2.8079167D-01	2.8404048D-01	8.9692697D 01	-2.5229973D-01	-8.7466487D-02	-5.8496274D-01
4	-9.9135162D-01	-9.8781934D-01	-2.5229973D-01	2.2184658D 00	8.5901526D-01	-1.8945947D-01
5	-7.8588070D-01	-7.8731131D-01	-8.7466487D-02	8.5901526D-01	9.4530655D-01	-1.7566629D-01
6	1.8436810D-01	1.9086201D-01	-5.8496274D-01	-1.8945947D-01	-1.7566629D-01	9.5720312D-02

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 4.7161456D 02
MEAN MAGNITUDE OF VELOCITY = 6.0708386D-01
RST OF POSITION = 1.8769232D 03
RST OF VELOCITY = 2.4133705D 00

MCC

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.0759044D 03	-8.2928346D-01	3.4190416D-01	5.8529470D-01	-9.6826352D-01	-2.3999858D-01
2	-8.2928346D-01	1.7979471D 02	-1.4429033D-01	-9.0078613D-01	8.7183869D-01	1.8815153D-01
3	3.4190416D-01	-1.4429033D-01	5.9754650D 01	-5.1913541D-04	-3.2358411D-01	3.4567717D-01
4	5.8529470D-01	-9.0078610D-01	-5.1913541D-04	1.4061966D 00	-6.4353603D-01	-1.4635331D-01
5	-9.6826352D-01	8.7183869D-01	-3.2358411D-01	-6.4353603D-01	4.5297865D-01	2.2850532D-01
6	-2.3999858D-01	1.8815153D-01	3.4567717D-01	-1.4635331D-01	2.2850532D-01	1.2416214D-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 1.3993425D 02
MEAN MAGNITUDE OF VELOCITY = 1.5564698D-01
RST OF POSITION = 1.0925592D 03
RST OF VELOCITY = 1.4525634D 00

1NM

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.4991608D 03	-9.8680877D-01	-9.9362782D-04	9.6939087D-01	-9.5371904D-01	-3.3677834D-01
2	-9.8680877D-01	1.2857575D 03	-2.6383651D-04	-9.6982331D-01	9.6225739D-01	3.1246746D-01
3	-9.9362782D-04	-2.6383651D-04	8.7008141D 01	-4.0160330D-02	3.9369812D-02	5.9337863D-01
4	9.6939087D-01	-9.6982331D-01	-4.0160330D-02	2.5357491D 00	-9.9365335D-01	-2.7685388D-01
5	-9.5371904D-01	9.6225739D-01	3.9369812D-02	-9.9365335D-01	1.0376277D 00	2.6392524D-01
6	-3.3677834D-01	3.1246746D-01	5.9337863D-01	-2.7685388D-01	2.6392524D-01	9.9200013D-02

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 2.9086024D 02
MEAN MAGNITUDE OF VELOCITY = 2.0279111D-01
RST OF POSITION = 1.9769233D 03
RST OF VELOCITY = 2.7416301D 00

DCA

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.7463720D 03	-9.7996976D-01	-9.1277898D-02	9.9126614D-01	-9.6340037D-01	-3.7271056D-01
2	-9.7996976D-01	2.2101198D 03	7.7387556D-02	-9.8860571D-01	9.6321712D-01	3.3829330D-01
3	-9.1277898D-02	7.7387556D-02	9.9606063D 01	-9.5134259D-02	1.0374165D-01	5.0884054D-01
4	9.9126614D-01	-9.8860571D-01	-9.5134259D-02	3.4292849D 00	-9.8607844D-01	-3.2928840D-01
5	-9.6340037D-01	9.6321712D-01	1.0374165D-01	-9.8607844D-01	1.3519057D 00	2.7767761D-01
6	-3.7271056D-01	3.3829330D-01	5.0884054D-01	-3.2928840D-01	2.7767761D-01	8.0998638D-02

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 4.0253280D 02
MEAN MAGNITUDE OF VELOCITY = 4.2790220D-01
RST OF POSITION = 2.0185752D 03
RST OF VELOCITY = 3.6870320D 00

Table 7. 9 Angles, W = D

MCC TRACKING EPOCH - AFTER TRACKING

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.17345720 03	9.95139200-01	2.58935570-01	-9.98651730-01	-9.44412210-01	2.50035750-01
2	9.95139200-01	1.44075880 03	2.42366200-01	-9.96070880-01	-9.49716240-01	2.54458440-01
3	2.58935570-01	2.42366200-01	9.06607510 01	-2.51415120-01	-1.87904540-01	-6.88319560-01
4	-9.98651730-01	-9.96070880-01	-2.51415120-01	2.22034780 00	9.59752020-01	-2.53221400-01
5	-9.44412210-01	-9.49716240-01	-1.87904540-01	9.59752020-01	9.31998080-01	-2.57267970-01
6	2.50035750-01	2.54458440-01	-6.88319560-01	-2.53221400-01	-2.57267970-01	6.46443570-02

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	4.64244320 02
MEAN MAGNITUDE OF VELOCITY =	6.12814720-01
RST OF POSITION =	1.81694170 03
RST OF VELOCITY =	2.40885370 00

MCC

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	6.01818100 02	-1.55133770-01	5.60807400-01	-1.64358240-01	-9.00377320-01	-2.23062350-01
2	-1.55133770-01	5.[illegible]7462D 02	2.04421390-01	-8.98018030-01	1.71175390-01	4.75043790-02
3	5.60807400-01	2.04421390-01	3.60526400 01	-3.68395350-01	-5.27523170-01	1.07293820-01
4	-1.64358240-01	-8.98018030-01	-3.68395350-01	9.13927940-01	1.07393620-01	-1.90969120-03
5	-9.00377320-01	1.71175390-01	-5.27523170-01	1.07393620-01	2.19203930-01	2.12480790-01
6	-2.23062350-01	4.75043790-02	1.07293820-01	-1.90969120-03	2.12480790-01	1.13381340-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	1.15046160 02
MEAN MAGNITUDE OF VELOCITY =	1.89331030-01
RST OF POSITION =	6.05349700 02
RST OF VELOCITY =	9.52456330-01

1NM

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	6.74404590 02	-9.91201510-01	-4.90525800-03	8.49518520-01	-7.78126290-01	-2.80273520-01
2	-9.91201510 01	4.76553460 02	4.23147020-03	-8.45814330-01	7.95386890-01	2.75151710-01
3	-4.90525800-03	4.23147020-03	6.10238030 01	-1.11445240-01	1.22160590-01	7.28988740-01
4	8.49518520 01	-8.45814330-01	-1.11445240-01	1.14065150 00	-9.72944090-01	-1.27479480-01
5	-7.78126290-01	7.95386890-01	1.22160590-01	-9.72944090-01	4.69565940-01	1.00868570-01
6	-2.80273520-01	2.75151710-01	7.28988740-01	-1.27479480-01	1.00868570-01	9.73601990-02

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	8.24798770 01
MEAN MAGNITUDE OF VELOCITY =	5.37312080-02
RST OF POSITION =	8.28039050 02
RST OF VELOCITY =	1.23735890 00

DCA

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	7.87952430 02	-9.89510560-01	-9.79355450-02	9.73723690-01	-8.38863920-01	-2.73718040-01
2	-9.89510560-01	8.11781890 02	9.10656600-02	-9.63029860-01	8.38189870-01	2.72977960-01
3	-9.79335150-02	9.10656600-02	7.73466180 01	-1.11689400-01	1.22101120-01	7.53335730-01
4	9.73723690-01	-9.63029860-01	-1.11689400-01	1.46023550 00	-9.36723740-01	-1.89054250-01
5	-8.38863920 01	8.38189870-01	1.22101120-01	-9.36723740-01	6.51913280-01	5.33385460-02
6	-2.73718040 01	2.72977960-01	7.53335730-01	-1.89054250-01	5.33385460-02	7.96073040-02

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	1.03444350 02
MEAN MAGNITUDE OF VELOCITY =	5.49568340-02
RST OF POSITION =	1.13394950 03
RST OF VELOCITY =	1.60112970 00

Table 8. 12 Angles, W = D

MCC TRACKING EPOCH - AFTER TRACKING

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.0967788D 03	9.9507987D-01	2.6053704D-01	-9.9956218D-01	-9.8257845D-01	3.3232793D-01
2	9.9507987D-01	1.4322725D 03	2.6532090D-01	-9.9718146D-01	-9.8877907D-01	3.3262562D-01
3	2.6053704D-01	2.6532090D-01	8.3008244D 01	-2.6007665D-01	-2.4009165D-01	-6.9285459D-01
4	-9.9956218D-01	-9.9718146D-01	-2.6007665D-01	2.2197812D 00	9.8712112D-01	-3.3301833D-01
5	-9.8257845D-01	-9.8877907D-01	-2.4009165D-01	9.8712112D-01	9.2672470D-01	-3.3165148D-01
6	3.3232793D-01	3.3262562D-01	-6.9285459D-01	-3.3301833D-01	-3.3165148D-01	4.4087417D-02

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	4.6304248D 02
MEAN MAGNITUDE OF VELOCITY =	4.1530293D-01
RST OF POSITION =	1.8058844D 03
RST OF VELOCITY =	2.4059035D 00

MCC

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	4.3956684D 02	7.5150499D-01	7.6268708D-01	-7.4057142D-01	-8.2560367D-01	-1.9544958D-01
2	7.5150499D-01	3.5508864D 01	7.0224762D-01	-9.3245955D-01	-8.3955400D-01	-1.5223290D-01
3	7.6268708D-01	7.0224762D-01	2.7592204D 01	-6.6246353D-01	-6.9552917D-01	-2.5353877D-01
4	-7.4057142D-01	-9.3245955D-01	-6.6246353D-01	8.0178560D-01	7.1948157D-01	1.1364591D-01
5	-8.2560367D-01	-8.3955400D-01	-6.9552917D-01	7.1948157D-01	1.5856728D-01	1.9216347D-01
6	-1.9544958D-01	-1.5223290D-01	-2.5353877D-01	1.1364591D-01	1.9216347D-01	1.0335027D-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	1.0854038D 02
MEAN MAGNITUDE OF VELOCITY =	1.9943635D-01
RST OF POSITION =	4.6176173D 02
RST OF VELOCITY =	8.2382361D-01

INM

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	3.3714400D 02	-9.8363017D-01	7.4037215D-02	4.7525381D-01	-2.6148570D-01	-2.4668744D-01
2	-9.8363017D-01	2.0612035D 02	-7.8198719D-02	-4.2453676D-01	2.6171713D-01	2.6101849D-01
3	7.4037215D-02	-7.8198719D-02	4.5024364D 01	-1.6499686D-01	2.0300366D-01	7.5883583D-01
4	4.7525381D-01	-4.2453676D-01	-1.6499686D-01	6.4774931D-01	-9.2198295D-01	6.5083879D-02
5	-2.6148570D-01	2.6171713D-01	2.0300366D-01	-9.2198295D-01	2.7660743D-01	-9.7181109D-02
6	-2.4668744D-01	2.6101849D-01	7.5883583D-01	6.5083879D-02	-9.7181109D-02	9.4434847D-02

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	4.3270619D 01
MEAN MAGNITUDE OF VELOCITY =	1.0284981D-01
RST OF POSITION =	3.9771707D 02
RST OF VELOCITY =	7.1056195D-01

DCA

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	3.8306404D 02	-9.7857194D-01	-5.5624433D-02	8.9547888D-01	-5.3140346D-01	-1.8400378D-01
2	-9.7857194D-01	3.4135392D 02	5.8339085D-02	-8.5198167D-01	5.1022407D-01	2.1055196D-01
3	-5.5624633D-02	5.8339085D-02	6.2144972D 01	-7.9328627D-02	9.3647795D-02	8.3215925D-01
4	8.9547888D-01	-8.5198167D-01	-7.9328627D-02	7.3730609D-01	-8.4260555D-01	-8.1167021D-03
5	-5.3140346D-01	5.1022407D-01	9.3647795D-02	-8.4260555D-01	4.1494381D-01	-1.7908203D-01
6	-1.8400378D-01	2.1055196D-01	8.3215925D-01	-8.1167021D-03	-1.7908203D-01	7.9780505D-02

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	2.9741676D 01
MEAN MAGNITUDE OF VELOCITY =	9.4358282D-02
RST OF POSITION =	5.1693902D 02
RST OF VELOCITY =	8.4980208D-01

Table 9. 3 Angles, W ≠ D

MCC TRACKING EPOCH - AFTER TRACKING

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.28968490 03	9.96606410-01	2.97031030-01	-9.98164110-01	-9.88498160-01	-2.03487100-01
2	9.96606410-01	1.69534790 03	3.01774740-01	-9.95975290-01	-9.88864260-01	-1.95878840-01
3	2.97031030-01	3.01774740-01	9.63729620 01	-3.04730450-01	-3.21498790-01	-3.51753270-01
4	-9.98164110-01	-9.95975290-01	-3.04730450-01	2.26090760 00	9.95381140-01	1.96829110-01
5	-9.88498160-01	-9.88864260-01	-3.21498790-01	9.95381140-01	8.12752000-01	1.77822850-01
6	-2.03487100-01	-1.95878840-01	-3.51753270-01	1.96829110-01	1.77822850-01	2.35449810-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 5.67302910 02
MEAN MAGNITUDE OF VELOCITY = 6.72323820-01
RST OF POSITION = 2.13231780 03
RST OF VELOCITY = 2.41406420 00

MCC

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.07476160 03	-9.75727450-01	-1.66034830-01	4.77296780-01	-9.87099550-01	-2.93233860-01
2	-9.75727450-01	2.81632340 02	1.75765150-01	-6.34694340-01	9.65495670-01	2.72313150-01
3	-1.66034830-01	1.75765150-01	1.70573910 02	-1.92352330-01	1.47210110-01	6.65247930-01
4	4.77296780-01	-6.34694340-01	-1.92352330-01	4.09533850-01	-5.09473410-01	-6.66107420-02
5	-9.87099550-01	9.65495670-01	1.47210110-01	-5.09473410-01	5.50847550-01	2.81158370-01
6	-2.93233860-01	2.72313150-01	6.65247930-01	-6.66107420-02	2.81158370-01	1.66767430-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 2.38185530 02
MEAN MAGNITUDE OF VELOCITY = 1.25923210-01
RST OF POSITION = 1.12339690 03
RST OF VELOCITY = 7.06372690-01

1NM

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.04535010 03	-9.93171160-01	-2.28572410-01	9.77238250-01	-9.69123880-01	-1.91864950-01
2	-9.93171160-01	1.11954530 03	2.15590490-01	-9.83560560-01	9.64632480-01	1.75102770-01
3	-2.28572410-01	2.15590490-01	2.01926550 02	-2.25154860-01	2.12582430-01	1.84336300-01
4	9.77238250-01	-9.83560560-01	-2.25154860-01	1.36515470 00	-9.75069640-01	-1.20618780-01
5	-9.69123880-01	9.64632480-01	2.12582430-01	-9.75069640-01	5.32179510-01	1.41733430-01
6	-1.91864950-01	1.75102770-01	1.84336300-01	-1.20618780-01	1.41733430-01	1.07384450-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 3.53491290 02
MEAN MAGNITUDE OF VELOCITY = 3.05122130-01
RST OF POSITION = 1.54496350 03
RST OF VELOCITY = 1.46914730 00

DCA

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.25952620 03	-9.93455110-01	-2.44126780-01	9.91989230-01	-9.62166720-01	-2.06227320-02
2	-9.93455110-01	1.55764770 03	2.28872870-01	-9.94524920-01	9.56594790-01	1.62173390-02
3	-2.44126780-01	2.28872870-01	1.99592140®02	-2.34286320-01	2.20834360-01	-3.27880330-01
4	9.91989230-01	-9.94524920-01	-2.34286320-01	1.93324370 00	-9.69254810-01	1.48752670-02
5	-9.62166720-01	9.56594790-01	2.20834360-01	-9.69254810-01	5.56882820-01	-3.31595930-02
6	-2.06227320-02	1.62173390-02	-3.27880330-01	1.48752670-02	-3.31595930-02	1.13294120-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 4.42267510 02
MEAN MAGNITUDE OF VELOCITY = 4.56631290-01
RST OF POSITION = 1.89425450 03
RST OF VELOCITY = 2.01503970 00

Table 10. 6 Angles, W ≠ D

MCC TRACKING EPOCH - AFTER TRACKING

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.3376536D 03	9.9684319D-01	3.8581878D-01	-9.9946622D-01	-9.9464739D-01	-1.9920481D-01
2	9.9684319D-01	1.7637341D 03	3.8798730D-01	-9.9694488D-01	-9.9385878D-01	-1.9195688D-01
3	3.8581878D-01	3.8798730D-01	1.0015771D 02	-3.8780347D-01	-3.9266767D-01	-5.8036306D-01
4	-9.9946622D-01	-9.9694488D-01	-3.8780347D-01	2.5539489D 00	9.9730560D-01	1.9159760D-01
5	-9.9464739D-01	-9.9385878D-01	-3.9266767D-01	9.9730560D-01	9.6242444D-01	1.6800076D-01
6	-1.9920481D-01	-1.9195688D-01	-5.8036306D-01	1.9159760D-01	1.6800076D-01	2.2484172D-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 5.8177750D 02
MEAN MAGNITUDE OF VELOCITY = 7.3298790D-01
RST OF POSITION = 2.2158760D 03
RST OF VELOCITY = 2.7385159D 00

MCC

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	8.2955130D 02	-9.0021484D-01	-1.6297145D-01	-6.9843720D-01	-9.6602670D-01	-3.4307422D-01
2	-9.0021484D-01	1.0068231ZD 02	2.2517472D-01	3.4775090D-01	8.9416400D-01	3.1128909D-01
3	-1.6297145D-01	2.2517472D-01	1.5186314D 02	-7.1907554D-02	1.3667081D-01	7.4155655D-01
4	-6.9843720D-01	3.4775090D-01	-7.1907554D-02	4.8705155D-01	6.0421819D-01	2.2483273D-01
5	-9.6602670D-01	8.9416400D-01	1.3667081D-01	6.0421819D-01	3.6922523D-01	3.1781690D-01
6	-3.4307422D-01	3.1128909D-01	7.4155655D-01	2.2483273D-01	3.1781690D-01	1.8001441D-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 1.8995116D 02
MEAN MAGNITUDE OF VELOCITY = 1.6972815D-01
RST OF POSITION = 8.5007585D 02
RST OF VELOCITY = 6.3714337D-01

1NM

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	6.7346855D 02	-9.9352956D-01	-2.7710404D-01	9.7555963D-01	-7.5133372D-01	-3.1409864D-01
2	-9.9352956D-01	6.2487146D 02	2.6152203D-01	-8.8671286D-01	7.7539989D-01	2.9787777D-01
3	-2.7710404D-01	2.6152203D-01	1.9536704D 02	-3.0709189D-01	2.4779834D-01	4.6732340D-01
4	9.7555963D-01	-8.8671286D-01	-3.0709189D-01	6.0671839D-01	-8.9814583D-01	-1.2993396D-01
5	-7.5133372D-01	7.7539989D-01	2.4779834D-01	-8.9814583D-01	2.4856382D-01	1.0710501D-01
6	-3.1409864D-01	2.9787777D-01	4.6732340D-01	-1.2993396D-01	1.0710501D-01	1.0661610D-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 1.8941353D 02
MEAN MAGNITUDE OF VELOCITY = 8.7946997D-02
RST OF POSITION = 9.3925104D 02
RST OF VELOCITY = 6.6427266D-01

DCA

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	6.4243169D 02	-9.9182934D-01	-3.0895013D-01	9.7948583D-01	-6.2487381D-01	-1.0942969D-01
2	-9.9182934D-01	8.5562755D 02	2.8783820D-01	-9.7427173D-01	6.3656381D-01	1.1767548D-01
3	-3.0895013D-01	2.8783820D-01	2.0356822D 02	-3.1120803D-01	2.2641102D-01	-9.0135922D-02
4	9.7948583D-01	-9.7427173D-01	-3.1120803D-01	9.6866146D-01	-7.3952342D-01	-1.5361542D-02
5	-6.2487381D-01	6.3656381D-01	2.2641102D-01	-7.3952342D-01	2.5768358D-01	-1.9544018D-01
6	-1.0942969D-01	1.1767548D-01	-9.0135922D-02	-1.5361542D-02	-1.9544018D-01	9.2466679D-02

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 2.1090455D 02
MEAN MAGNITUDE OF VELOCITY = 1.7726717D-01
RST OF POSITION = 1.8858650 03
RST OF VELOCITY = 1.7665610 00

Table 11. 9 Angles, W ≠ D

MCC TRACKING EPOCH - AFTER TRACKING

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.39720610 03	9.97091170-01	4.14281650-01	-9.99830420-01	-9.97123820-01	-1.66181090-01
2	9.97091170-01	1.82917630 03	4.14797040-01	-9.97840950-01	-9.97029720-01	-1.58213790-01
3	4.14281650-01	4.14797040-01	1.07134400 02	-4.13735590-01	-4.08587240-01	-7.02309360-01
4	-9.99830420-01	-9.97840950-01	-4.13735590-01	2.78425850 00	9.98243300-01	1.60364500-01
5	-9.97123820-01	-9.97029720-01	-4.08587240-01	9.98243300-01	1.09785440 00	1.32503400-01
6	-1.66181090-01	-1.58213790-01	-7.02309360-01	1.60364500-01	1.32503400-01	1.86194020-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 5.94283630 02
MEAN MAGNITUDE OF VELOCITY = 7.75818830-01
RST OF POSITION = 2.30424580 03
RST OF VELOCITY = 2.99867430 00

MCC

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	6.63250610 02	1.99240680-01	-1.03577570-01	-9.29379260-01	-9.26550010-01	-3.65214620-01
2	1.99240680-01	2.75513850 01	2.76878360-01	-4.93993370-01	-1.69975390-01	2.19858140-02
3	-1.03577570-01	2.76878360-01	1.15606210 02	-6.84679260-02	5.68477990-02	7.27613260-01
4	-9.29379260-01	-4.93993370-01	-6.84679260-02	7.83808340-01	8.22077720-01	2.78631060-01
5	-9.26550010-01	-1.69975390-01	5.68477990-02	8.22077720-01	2.47718930-01	3.18482280-01
6	-3.65214620-01	2.19858140-02	7.27613260-01	2.78631060-01	3.18482280-01	1.79077340-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 1.59629610 02
MEAN MAGNITUDE OF VELOCITY = 2.23072860-01
RST OF POSITION = 6.73813960 02
RST OF VELOCITY = 8.41301890-01

1NM

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	4.03221250 02	-9.87252630-01	-3.28367550-01	-5.25627820-02	2.80211810-01	-4.05164550-01
2	-9.87252630-01	3.11588270 02	3.00626420-01	2.92517680-02	-2.00157480-01	3.85068310-01
3	-3.28367550-01	3.00626420-01	1.64322080 02	-2.76334300-01	1.00525610-01	6.52422430-01
4	-5.25627820-02	2.92517680-02	-2.76334300-01	3.32834010-01	-8.16036050-01	1.96382480-01
5	2.80211810-01	-2.00157480-01	1.00525610-01	-8.16036050-01	1.92144510-01	-2.40793110-01
6	-4.05164550-01	3.85068310-01	6.52422430-01	1.96382480-01	-2.40793110-01	1.14353960-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 9.70158270 01
MEAN MAGNITUDE OF VELOCITY = 6.95605410-02
RST OF POSITION = 5.35421680 02
RST OF VELOCITY = 4.00567350-01

DCA

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	3.39471480 02	-9.75049580-01	-4.02860260-01	7.88289160-01	3.25437360-01	-2.16488980-01
2	-9.75049580-01	3.98866410 02	3.59111480-01	-7.45865760-01	-3.00247060-01	2.40865470-01
3	-4.02860260-01	3.59111480-01	1.76753280 02	-4.16496170-01	8.45260570-03	3.04497430-01
4	7.88289160-01	-7.45865760-01	-4.16496170-01	3.97531010-01	-2.93831800-01	1.27259270-01
5	3.25437360-01	-3.00247060-01	8.45260570-03	-2.93831800-01	2.83299760-01	-4.68737310-01
6	-2.16488980-01	2.40865470-01	3.04497430-01	1.27059270-01	-4.68737310-01	8.47747230-02

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 8.57196550 01
MEAN MAGNITUDE OF VELOCITY = 7.89174210-02
RST OF POSITION = 5.52790210 02
RST OF VELOCITY = 4.95455760-01

Table 12. 12 Angles, W ≠ D

MCC TRACKING EPOCH - AFTER TRACKING

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.43123940 03	9.97285140-01	4.1354645D-01	-9.99855160-01	-9.9754964D-01	-7.83760340-02
2	9.97285140-01	1.8667U36D 03	4.1343086D-01	-9.9830489D-01	-9.98411810-01	-6.90712870-02
3	4.1354645D-01	4.1343086D-01	1.0427153D 02	-4.1315496D-01	-4.0568877D-01	-7.16761200-01
4	-9.99855160-01	-9.9833480D-01	-4.1315496D-01	2.8857723D 00	9.9845360D-01	7.41654540-02
5	-9.97549640-01	-9.9841181D-01	-4.0568877D-01	9.9845360D-01	1.1635321D 00	4.59924710-02
6	-7.83760340-02	-6.90712870-02	-7.16761200-01	7.4165454D-02	4.5992471D-02	1.20026760-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 6.01140780 02
MEAN MAGNITUDE OF VELOCITY = 7.9517451D-01
RST OF POSITION = 2.3539917D 03
RST OF VELOCITY = 3.1138232D 00

MCC

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	6.0298021D 02	9.0849674D-01	1.03025670-01	-9.6940748D-01	-9.0322973D-01	-3.55893870-01
2	9.0849674D-01	3.8974429D 01	2.2796593D-01	-9.4637148D-01	-9.2479644D-01	-2.87381940-01
3	1.0302567D-01	2.2796593D-01	6.7846207D 01	-2.4876924D-01	-1.6375385D-01	5.34674690-01
4	-9.6940748D-01	-9.4637148D-01	-2.4876924D-01	9.1384607D-01	8.7951421D-01	2.88939640-01
5	-9.0322973D-01	-9.2879644D-01	-1.6375385D-01	8.7951421D-01	2.0328705D-01	2.98706770-01
6	-3.5589387D-01	-2.8738194D-01	5.3467469D-01	2.8893964D-01	2.9870677D-01	1.52225960-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 1.4877729D 02
MEAN MAGNITUDE OF VELOCITY = 2.4564143D-01
RST OF POSITION = 6.0835556D 02
RST OF VELOCITY = 9.4843647D-01

INM

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	2.9385538D 02	-9.8188446D-01	-3.2458998D-01	-5.5368472D-01	6.7583316D-01	-4.41858560-01
2	-9.8188446D-01	1.9522253D 02	2.6716811D 01	5.7587432D-01	-6.2726635D-01	4.27129740-01
3	-3.2458998D-01	2.6716811D-01	1.0852926D 02	-1.6539066D-01	4.9750447D-02	7.13413970-01
4	-5.5368472D-01	5.7587432D-01	-1.6539066D-01	4.2213133D-01	-8.8724771D-01	3.26898030-01
5	6.7583316D-01	-6.2726635D-01	4.9750447D-02	-8.8724771D-01	2.3585089D-01	-3.46536130-01
6	-4.4185856D-01	4.2712974D-01	7.1341397D-01	3.2689803D-01	-3.4653613D-01	1.14824720-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 6.5941526D 01
MEAN MAGNITUDE OF VELOCITY = 1.1425146D-01
RST OF POSITION = 3.6903321D 02
RST OF VELOCITY = 4.9699629D- 1

DCA

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	2.2146 75D 02	-9.4549460D-01	-4.3752243D 01	3.3795426D-01	4.6331508D-01	-2.96379720-01
2	-9.4548456D-01	2.2272459D 02	3.9068514D 01	-1.9792546D-01	-4.8782970D-01	3.32573910-01
3	-4.3752243D-01	3.9068514D-01	1.2529171D 02	3.5243484D-01	-4.2518190D 02	6.08685400-01
4	3.3795426D-01	-1.9792546D-01	-3.5243484D 1	3.2568940D-01	-6.5062552D-01	2.99035750-01
5	4.6331508D-01	-4.8782970D-01	-4.2518190D 02	-6.5062552D-01	3.6123153D 01	-4.90269550-01
6	-2.9637972D-01	3.3257391D-01	6.0868540D 01	2.9903575D-01	4.9026955D 01	8.75749330-02

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 4.4798 42D 01
MEAN MAGNITUDE OF VELOCITY = 1.0871714D-01
RST OF POSITION = 3.3815547D 02
RST OF VELOCITY = 4.9426855D-01

Table 13. 0 Angles and Range, W = D

MCC

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	8.7801465D 02	-9.9943944D-01	-8.9128796D-02	9.9970753D-01	-9.9999808D-01	1.3684684D-01
2	-9.9943944D-01	2.2214893D 03	8.7954597D-02	-9.9995587D-01	9.9945013D-01	-1.3912088D-01
3	-8.9128796D-02	8.7954597D-02	2.1605424D 02	-8.8632134D-02	8.9079139D-02	-6.9170534D-02
4	9.9970753D-01	-9.9995587D-01	-8.8632134D-02	2.6759795D 00	-9.9971309D-01	1.3827790D-01
5	-9.9999808D-01	9.9945013D-01	8.9079139D-02	-9.9971309D-01	7.4175151D-01	-1.3722623D-01
6	1.3684684D-01	-1.3912088D-01	-6.9170534D-02	1.3827790D-01	-1.3722623D-01	1.8146062D-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 2.9587094D 02
MEAN MAGNITUDE OF VELOCITY = 3.3067747D-01
RST OF POSITION = 2.3984586D 03
RST OF VELOCITY = 2.7828024D 00

1NM

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	8.3742354D 02	-9.9469390D-01	-4.1085075D-02	9.9591571D-01	-9.9988717D-01	1.2966721D-01
2	-9.9469390D-01	3.0978013D 03	4.3412719D-02	-9.9991872D-01	9.9305536D-01	-1.3256008D-01
3	-4.1085075D-02	4.3412719D-02	1.9490194D 02	-4.3455626D-02	4.0595620D-02	-3.2893622D-01
4	9.9591571D-01	-9.9991872D-01	-4.3455626D-02	3.4551555D 00	-9.9446088D-01	1.3223687D-01
5	-9.9988717D-01	9.9305536D-01	4.0595620D-02	-9.9446088D-01	6.9136206D-01	-1.2945862D-01
6	1.2966721D-01	-1.3256008D-01	-3.2893622D-01	1.3223687D-01	-1.2945862D-01	2.1127415D-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 2.5668165D 02
MEAN MAGNITUDE OF VELOCITY = 2.9802063D-01
RST OF POSITION = 3.2149287D 03
RST OF VELOCITY = 3.5299741D 00

DCA

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	7.8396140D 02	-9.8938916D-01	-2.5293148D-02	9.9095610D-01	-9.9946354D-01	1.1066288D-01
2	-9.8938916D-01	3.4346660D 03	2.5134437D-02	-9.9993445D-01	9.8412333D-01	-1.1594081D-01
3	-2.5293148D-02	2.5134437D-02	1.7715108D 02	-2.5485811D-02	2.5056749D-02	-3.2090971D-01
4	9.9095610D-01	-9.9993445D-01	-2.5485811D-02	3.7662582D 00	-9.8604500D-01	1.1565595D-01
5	-9.9946354D-01	9.8412333D-01	2.5056749D-02	-9.8604500D-01	6.2761581D-01	-1.0938001D-01
6	1.1066288D-01	-1.1594081D-01	-3.2090971D-01	1.1565595D-01	-1.0938001D-01	2.3175019D-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 2.5537513D 02
MEAN MAGNITUDE OF VELOCITY = 2.9901141D-01
RST OF POSITION = 3.5274507D 03
RST OF VELOCITY = 3.8252204D 00

Table 14. 3 Angles and Range, W = D

MCC TRACKING EPOCH - AFTER TRACKING

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	6.57495380 01	-9.84612790-01	-2.35180180-02	-7.63947260-02	3.97827140-01	-2.15232790-02
2	-9.84612790-01	5.12998380 01	-1.05306320-02	1.53095530-02	-4.61032430-01	3.64762350-02
3	-2.35180180-02	-1.05306320-02	8.88570550 01	-2.47141660-01	2.01599800-01	-5.36741210-01
4	-7.63947260-02	1.53095530-02	-2.47141660-01	1.72688170-01	-5.48652370-01	3.27554840-02
5	3.97827140-01	-4.61032430-01	2.01599800-01	-5.48652370-01	1.41736090-01	-4.05913710-02
6	-2.15232790-02	3.64762350-02	-5.36741210-01	3.27554840-02	-4.05913710-02	1.92108410-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	4.63238060 00
MEAN MAGNITUDE OF VELOCITY =	2.73341520-02
RST OF POSITION =	1.21861610 02
RST OF VELOCITY =	2.94645490-01

MCC

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.53753120 02	-5.24253950-01	-2.77712950-02	9.86268340-01	-3.53718600-01	2.47279310 02
2	-5.24253950-01	1.96328190 02	4.57811580-02	-6.46929700-01	8.76437480-01	-1.66973520-01
3	-2.77712950-02	4.57811580-02	1.31076240 02	-3.49508490-02	3.08797200-02	7.04500420-01
4	9.86268340-01	-6.46929700-01	-3.49508490-02	3.20679980-01	-4.42331910-01	4.60863050-02
5	-3.53718600-01	8.76437480-01	3.08797200-02	-4.42331910-01	1.42293860-01	-1.74518170-01
6	2.47279310-02	-1.66973520-01	7.04500420-01	4.60863050-02	-1.74518170-01	1.54824000-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	2.12453460 01
MEAN MAGNITUDE OF VELOCITY =	2.45221190-02
RST OF POSITION =	2.82137760 02
RST OF VELOCITY =	3.83475760-01

INM

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	2.63363420 02	-5.73243670-01	-2.05231070-02	9.62453830-01	-8.67461780-01	-6.67998600-02
2	-5.73243670-01	3.10829430 02	-2.91845020-02	-7.66560770-01	8.47358910-01	-1.92259850-01
3	-2.05231070-02	-2.91845020-02	1.06436440 02	-9.36929310-03	-1.10445320-02	4.41774870-01
4	9.62453830-01	-7.66560770-01	-9.36929310-03	5.15418380-01	-9.29356310-01	7.65447840-03
5	-8.67461780-01	8.47358910-01	-1.10445320 02	-9.29356310-01	1.64523910-01	-6.38477850-02
6	-6.67998600-02	-1.92259850-01	4.41774870-01	7.65447840-03	-6.38477850-02	9.65205460-02

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	2.70729900 01
MEAN MAGNITUDE OF VELOCITY =	2.66249180-02
RST OF POSITION =	4.40086710 02
RST OF VELOCITY =	5.49582060-01

DCA

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	3.36197760 02	-6.79708430-01	-4.23875530-02	9.54726620-01	-9.65678200 01	-8.69433320-02
2	-6.79708430-01	4.03202760 02	-3.02382850-02	-8.56569060-01	8.07301270-01	-1.39236580-01
3	-4.23875530-02	-3.02382850-02	1.71124150 02	-1.86869230-02	2.20946530-02	-5.88430810-02
4	9.54726620-01	-8.56569060-01	-1.86869230-02	6.56292750-01	-9.76380970-01	-4.02568950-03
5	-9.65678200-01	8.07301270-01	2.20946530-02	-9.76380970-01	2.26970310-01	3.21941980-02
6	-8.69433320-02	-1.39236580-01	-5.88430810-02	-4.02568950-03	3.21941980-02	8.43869140-02

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	3.26453630 01
MEAN MAGNITUDE OF VELOCITY =	4.05789710-02
RST OF POSITION =	5.52163810 02
RST OF VELOCITY =	6.99540710-01

Table 15. 6 Angles and Range, W = D

MCC TRACKING EPOCH - AFTER TRACKING

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	6.8244710D 01	-9.8951454D-01	-3.7078629D-02	-8.0325835D-01	8.5897879D-01	-1.1557978D-02
2	-9.8951454D-01	5.0842253D 01	7.4237500D-04	7.6310988D-01	-8.9369687D-01	3.4651799D-02
3	-3.7078629D-02	7.4237500D-04	8.7588937D 01	-1.0501907D-01	7.0895274D-02	-7.9746752D-01
4	-8.0325835D-01	7.6310988D-01	-1.0501907D-01	8.0580195D-02	-7.9935448D-01	8.1268861D-02
5	8.5897879D-01	-8.9369687D-01	7.0895274D-02	-7.9935448D-01	7.2474284D-02	-6.3783936D-02
6	-1.1557978D-02	3.4651799D-02	-7.9746752D-01	8.1268861D-02	-6.3783936D-02	9.3345617D-02

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 4.2868524D 00
MEAN MAGNITUDE OF VELOCITY = 9.6880972D-03
RST OF POSITION = 1.2212329D 02
RST OF VELOCITY = 1.4303529D-01

MCC

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	8.1666280D 01	-5.9801199D-01	-3.4161418D-02	9.9682882D-01	5.9508909D-01	5.2219030D-02
2	-5.9801199D-01	5.5882020D 01	1.5451265D-02	-6.4076200D-01	1.1474262D-01	-2.0875155D-01
3	-3.4161418D-02	1.5451265D-02	4.7634315D 01	-3.8740579D-02	-4.9132109D-02	5.8399285D-01
4	9.9682882D-01	-6.4076200D-01	-3.8740579D-02	1.7960181D-01	5.9009215D-01	5.4418455D-02
5	5.9508909D-01	1.1474262D-01	-4.9132109D-02	5.9009215D-01	6.8458973D-02	-1.2149073D-01
6	5.2219030D-02	-2.0875155D-01	5.8399285D-01	5.4418455D-02	-1.2149073D-01	1.2754550D-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 7.1474919D 00
MEAN MAGNITUDE OF VELOCITY = 1.9887299D-02
RST OF POSITION = 1.0982354D 02
RST OF VELOCITY = 2.3067574D-01

1NM

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.6417215D 02	-7.8780139D-01	-3.2648231D-03	9.9369388D-01	-8.4017431D-01	1.4540232D-02
2	-7.8780139D-01	1.0965019D 02	-9.6498885D-02	-8.4365131D-01	9.0570350D-01	-1.7361576D-01
3	-3.2648231D-03	-9.6498885D-02	8.5176769D 01	9.4739544D-03	-7.1292322D-02	8.0006649D-01
4	9.9365388D-01	-8.4365131D-01	9.4739544D-03	3.2681804D-01	-8.5439069D-01	4.0226194D-02
5	-8.4017431D-01	9.0570350D-01	-7.1292322D-02	-8.5439069D-01	8.8740111D-02	-1.0087504D-01
6	1.4540232D-02	-1.7361576D-01	8.0006649D-01	4.0226194D-02	-1.0087504D-01	9.6571438D-02

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 9.2393633D 00
MEAN MAGNITUDE OF VELOCITY = 1.1399427D-02
RST OF POSITION = 2.1511541D 02
RST OF VELOCITY = 3.4581277D-01

DCA

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	2.2159641D 02	-8.9213101D-01	-1.4885173D-02	9.9306080D-01	-9.8076769D-01	1.0589661D-02
2	-8.9213101D-01	1.7625715D 02	-6.9907088D-02	-9.3665384D-01	9.3720527D-01	-1.3076981D-01
3	-1.4885173D-02	-6.9907088D-02	1.0135495D 02	5.4506241D-03	-6.2782203D-03	7.3384368D-01
4	9.9306080D-01	-9.3665384D-01	5.4506241D-03	4.3297932D-01	-9.8340792D-01	4.2736054D-02
5	-9.8076769D-01	9.3720527D-01	-6.2782203D-03	-9.8340792D-01	1.1756642D-01	-3.3110713D-02
6	1.0589661D-02	-1.3076981D-01	7.3384368D-01	4.2736054D-02	-3.3110713D-02	7.1601958D-02

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 1.4184298D 01
MEAN MAGNITUDE OF VELOCITY = 2.0608448D-02
RST OF POSITION = 3.0074040D 02
RST OF VELOCITY = 4.5432867D-01

Table 16. 9 Angles and Range, W = D

MCC TRACKING EPOCH - AFTER TRACKING

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	6.93360310 01	-9.9128514D-01	-4.8453786D-02	-9.6857804D-01	9.2766408D-01	1.8011005D-03
2	-9.9128514D-01	4.8130505D 01	7.4027166D-03	9.4748608D-01	-9.5320950D-01	3.0316937D-02
3	-4.8453786D-02	7.4027166D-03	8.5290254D 01	5.0570436D-04	2.0289343D-02	-8.7329860D-01
4	-9.6857804D-01	9.4748608D-01	5.0570436D-04	8.1333777D-02	-9.1386871D-01	2.8532925D-02
5	9.2766408D-01	-9.5320950D-01	2.0289343D-02	-9.1386871D-01	4.8199534D-02	-4.1936740D-02
6	1.8011005D-03	3.0316937D-02	-8.7329860D-01	2.8532925D-02	-4.1936740D-02	4.5113404D-02

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 3.9833247D 00
MEAN MAGNITUDE OF VELOCITY = 5.5940748D-03
RST OF POSITION = 1.1999358D 02
RST OF VELOCITY = 1.1479605D-01

MCC

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	5.2268504D 01	-7.2741034D-01	-5.7920863D-02	9.9796685D-01	8.8430225D-01	6.5704502D-02
2	-7.2741034D-01	2.6860615D 01	6.3042911D-02	-7.4619330D-01	-4.6695683D-01	-1.8578849D-01
3	-5.7920863D-02	6.3042911D-02	2.5471840D 01	-6.3338435D-02	-6.0839225D-02	4.0647816D-01
4	9.9796685D-01	-7.4619330D-01	-6.3338435D-02	1.2406157D-01	8.9443385D-01	5.4252718D-02
5	8.8430225D-01	-4.6695583D-01	-6.0839225D-02	8.9443385D-01	7.0102028D-02	-3.1119075D-02
6	6.5704502D-02	-1.8578849D-01	4.0647816D-01	5.4252718D-02	-3.1119075D-02	1.1618505D-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 3.6286733D 00
MEAN MAGNITUDE OF VELOCITY = 8.0979236D-03
RST OF POSITION = 6.4049230D 01
RST OF VELOCITY = 1.8386009D-01

1NM

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.1723800D 02	-8.5448192D-01	1.5737385D-02	9.9777187D-01	-5.1777608D-01	4.1602354D-02
2	-8.5448192D-01	5.4859900D 01	-1.0970892D-01	-8.7745598D-01	7.3048785D-01	-1.6369227D-01
3	1.5737385D-02	-1.0970892D-01	6.1769626D 01	2.0461339D-02	-1.2951489D-01	8.8748432D-01
4	9.9777187D-01	-8.7745598D-01	2.0461339D-02	2.4028528D-01	-5.1329930D-01	5.1250232D-02
5	-5.1777608D-01	7.3048785D-01	-1.2951489D-01	-5.1329930D-01	2.2807174D-02	-1.3869920D-01
6	4.1602354D-02	-1.6369227D-01	8.8748432D-01	5.1250232D-02	-1.3869920D-01	9.5329098D-02

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 4.7909915D 00
MEAN MAGNITUDE OF VELOCITY = 7.6959372D-03
RST OF POSITION = 1.4342191D 02
RST OF VELOCITY = 2.5950913D-01

DCA

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.6600305D 02	-9.4314589D-01	1.0005853D-02	9.9791773D-01	-9.8017288D-01	4.0948174D-02
2	-9.4314589D-01	1.0156955D 02	-7.5736993D-02	-9.5945235D-01	9.6824409D-01	-1.2037756D-01
3	1.0005853D-02	-7.5736993D-02	8.0487207D 01	2.0911492D-02	-2.7280184D-02	8.8918985D-01
4	9.9791773D-01	-9.5945235D-01	2.0911492D-02	3.2480189D-01	-9.8043094D-01	5.5700889D-02
5	-9.8017288D-01	9.6824409D-01	-2.7280184D-02	-9.8043094D-01	4.9913322D-02	-5.4621057D-02
6	4.0948174D-02	-1.2037756D-01	8.8918985D-01	5.5700889D-02	-5.4621057D-02	7.3350549D-02

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 8.9492499D 00
MEAN MAGNITUDE OF VELOCITY = 1.4404012D-02
RST OF POSITION = 2.1064639D 02
RST OF VELOCITY = 3.4024175D-01

Table 17. 12 Angles and Range, W = D

MCC TRACKING EPOCH - AFTER TRACKING

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	6.9501863D 01	-9.9169978D-01	-5.8813131D-02	-9.9318590D-01	9.2667808D-01	1.5432821D-02
2	-9.9169978D-01	4.4068690D 01	1.1349869D-02	9.7863269D-01	-9.5350553D-01	2.3525447D-02
3	-5.8813131D-02	1.1349869D-02	8.1470490D 01	4.4340414D-02	5.7632024D-03	-8.9974235D-01
4	-9.9318590D-01	9.7863269D-01	4.4340414D-02	8.5599593D-02	-9.2135265D-01	-7.1624755D-03
5	9.2667808D-01	-9.5350553D-01	5.7632024D-03	-9.2135265D-01	2.8767862D-02	-2.9024064D-02
6	1.5432821D-02	2.3525447D-02	-8.9974235D-01	-7.1624755D-03	-2.9024064D-02	4.5209645D-02

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	3.7128209D 00
MEAN MAGNITUDE OF VELOCITY =	4.0687898D-03
RST OF POSITION =	1.1580155D 02
RST OF VELOCITY =	1.0C98907D-01

MCC

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	3.2261296D 01	-8.6747904D-01	-1.0775727D-01	9.9699172D-01	9.4342492D-01	8.1992147D-02
2	-8.6747904D-01	1.8542585D 01	1.5969694D-01	-8.8093414D-01	-7.8990401D-01	-1.3666399D-01
3	-1.0775727D-01	1.5969694D-01	1.5457516D 01	-1.0044080D-01	-7.2866489D-02	-1.2858269D-01
4	9.9699172D-01	-8.8093414D-01	-1.0044080D-01	8.5875561D-02	9.5795579D-01	5.6248870D-02
5	9.4342492D-01	-7.8990401D-01	-7.2866489D-02	9.5795579D-01	7.2759933D-02	1.0208450D-02
6	8.1992147D-02	-1.3666399D-01	-1.2858269D-01	5.6248870D-02	1.0208450D-02	1.0480086D-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	2.0246845D 00
MEAN MAGNITUDE OF VELOCITY =	5.9891662D-03
RST OF POSITION =	4.0293343D 01
RST OF VELOCITY =	1.5379155D-01

1NM

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	8.1150841D 01	-8.5728601D-01	3.3151756D-02	9.9847325D-01	6.4727341D-01	5.7447829D-02
2	-8.5728601D-01	2.7503744D 01	-1.2130628D-01	-8.6814814D-01	-3.3144098D-01	-1.6868715D-01
3	3.3151756D-02	-1.2130628D-01	4.4906653D 01	3.1271341D-02	-8.2223737D-02	9.2012367D-01
4	9.9847325D-01	-8.6814814D-01	3.1271341D-02	1.7593846D-01	6.6664119D-01	5.8568983D-02
5	6.4727341D-01	-3.3144098D-01	-8.2223737D-02	6.6664119D-01	1.9613652D-02	-5.5945601D-02
6	5.7447829D-02	-1.6868715D-01	9.2012367D-01	5.8568983D-02	-5.5945601D-02	9.2238163D-02

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	2.7662963D 00
MEAN MAGNITUDE OF VELOCITY =	5.8328776D-03
RST OF POSITION =	9.6739456D 01
RST OF VELOCITY =	1.9961692D-01

DCA

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.2134915D 02	-9.5393408D-01	2.9126755D-02	9.9902303D-01	-9.5742660D-01	5.4840024D-02
2	-9.5393408D-01	5.7140553D 01	-8.5791517D-02	-9.6178778D-01	9.6973803D-01	-1.2075665D-01
3	2.9126755D-02	-8.5791517D-02	6.4304380D 01	3.4225412D-02	-4.9426579D-02	9.4211001D-01
4	9.9902303D-01	-9.6178778D-01	3.4225412D-02	2.4183251D-01	-9.5487171D-01	6.1876414D-02
5	-9.5742660D-01	9.6973803D-01	-4.9426579D-02	-9.5487171D-01	3.5656885D-02	-7.2382600D-02
6	5.4840024D-02	-1.2075665D-01	9.4211001D-01	6.1876414D-02	-7.2382600D-02	7.4564360D-02

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	6.1531832D 00
MEAN MAGNITUDE OF VELOCITY =	1.0570217D-02
RST OF POSITION =	1.4874715D 02
RST OF VELOCITY =	2.5556647D-01

Table 18. 3 Angles and Range, W ≠ D

MCC TRACKING EPOCH - AFTER TRACKING

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	6.94296080 01	-9.94133700-01	-5.7014487D-02	9.71655300-01	-9.93459230-01	-7.88835510-02
2	-9.94133700-01	4.59853380 01	2.1946116D-02	-9.76868810-01	9.85692100-01	9.43764870-02
3	-5.70144870 02	2.19461160-02	9.2103239D 01	-4.44897160-02	5.12697730-02	-3.22242380-01
4	9.71655300 01	-9.76868810-01	-4.4489716D-02	5.38725390-02	-9.39706480-01	-1.19653220-01
5	-9.93459230-01	9.85692100-01	5.1269773D-02	-9.39706480-01	1.83301740-01	6.51388970-02
6	-7.88835510-02	9.43764870-02	-3.2224238D-01	-1.19653220-01	6.51388970-02	2.32087710-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	3.46510380 00
MEAN MAGNITUDE OF VELOCITY =	7.74756190-03
RST OF POSITION =	1.24149760 02
RST OF VELOCITY =	3.06613190-01

MCC

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	7.54154380 01	9.26034410-01	3.4041827D-02	8.21620820-01	5.01352370-01	2.32368420-04
2	9.26034410-01	1.88840530 02	1.0462761D-01	5.04625910-01	8.17984790-01	2.04535320-02
3	3.40418270-02	1.04627610-01	1.6955431D 02	-7.39293290-02	1.70116270-01	6.66083880-01
4	8.21620820-01	5.04625910-01	-7.3929329D-02	6.17153910-02	-6.90937440-02	-4.46834040-02
5	5.01352370-01	8.17984790-01	1.7011627D-01	-6.90937440-02	2.24158490-02	1.88041060-02
6	2.32368420-04	2.04535320-02	6.6608388D-01	-4.46834040-02	1.88041060-02	1.60056280-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	8.46289620 00
MEAN MAGNITUDE OF VELOCITY =	3.07664120-03
RST OF POSITION =	2.44797510 02
RST OF VELOCITY =	1.73000790-01

1NM

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	1.98973060 02	7.97699410-01	4.29011050-02	9.72419280-01	-9.99396160-01	-5.. 25490-02
2	7.97699410-01	1.03613120 02	1.25649770-01	6.35436330-01	-7.77659990-01	-9.13521410-02
3	4.29011050-02	1.25649770-01	1.98648920 02	5.93741730-03	-3.69180970-02	1.75397660-01
4	9.72419280-01	6.35436300-01	5.93741730-03	1.89532380-01	-9.79181250-01	-3.29466470-02
5	-9.99396160-01	7.77659990-01	-3.6918697D-02	-9.79181250-01	1.32877280-01	4.52086330-02
6	-5.00525490-02	-9.13521410-02	1.75397660-01	-3.29466470-02	4.52086330-02	1.03345210-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	1.01831940 01
MEAN MAGNITUDE OF VELOCITY =	5.28887940- 3
RST OF POSITION =	2.99645380 02
RST OF VELOCITY =	2.53493940-01

DCA

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	2.67611340 02	-4.20239980-01	4.2151413D-02	9.84426480-01	-9.89554890-01	-8.23643440-02
2	-4.20239980-01	6.66564720 01	8.7253450D-02	-5.62949390-01	4.24547190-01	-1.27514870-01
3	4.21514130-02	8.72534500-02	1.9867593D 02	2.87000970-02	-4.19468220-02	-3.45455950-01
4	9.84426480-01	-5.62949390-01	2.8700970D-02	2.98419160-01	-9.87054200-01	-5.52867130-02
5	-8.89554890-01	4.24547190-01	-4.1946822D-02	-9.87054200-01	2.13653200-01	8.04862780-02
6	-8.23643440-02	-1.27514870-01	-3.4545595D-01	-5.52867130-02	8.04862780-02	1.09953190-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	7.78219620 00
MEAN MAGNITUDE OF VELOCITY =	8.89837420-03
RST OF POSITION =	3.38267440 02
RST OF VELOCITY =	3.83133650-01

Table 19. 6 Angles and Range, W ≠ D

MCC TRACKING EPOCH - AFTER TRACKING

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	5.507124&D-01	-9.525054&D-01	-3.512725&D-02	7.330835&D-01	-9.950807&D-01	-7.702360&D-02
2	-9.525054&D-01	1.640231&D 01	-6.282134&D-02	-8.596920&D-01	9.296234&D-01	1.403544&D-01
3	-3.512725&D-02	-6.282134&D-02	9.280334&D-01	2.069691&D-02	3.063865&D-02	-5.644173&D-01
4	7.330835&D-01	-8.596920&D-01	2.069691&D-02	1.790295&D-02	-6.651350&D-01	-2.069545&D-01
5	-9.950807&D-01	9.296234&D-01	3.063865&D-02	-6.651350&D-01	1.724911&D-01	6.077135&D-02
6	-7.702360&D-02	1.403544&D-01	-5.644173&D-01	-2.069545&D-01	6.077135&D-02	2.218574&D-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = 2.142376&D 0
MEAN MAGNITUDE OF VELOCITY = 6.576831&D-03
RST OF POSITION = 1.&D9152&2D 02
RST OF VELOCITY = 2.815926&D-01

MCC

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	8.784151&D-01	9.479584&D-01	3.980&0495D-&2	9.893440&D-01	2.941068&D-01	7.406395&D-03
2	9.479584&D-01	1.&0524390 02	1.111487&D-01	8.916296&D-01	5.789566&D-01	3.373312&D-02
3	3.980&04&D-02	1.111487&D-01	1.515291&D &2	4.&012535D-03	2.338377&D-01	7.546406&D-01
4	9.893440&D-01	8.916296&D-01	4.&012535D-&3	1.&943219D-01	1.595939&D-01	-1.480741&D-02
5	2.941068&D-01	5.789566&D-01	2.338377&D-01	1.595939&D-01	1.&95&5&D-02	3.564516&D-02
6	7.406395&D-03	3.373312&D-02	7.546406&D-01	-1.480741&D-02	3.564516&D-02	1.7&956&D-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = &.&&1&&&D &
MEAN MAGNITUDE OF VELOCITY = 2.&3295&D-&3
RST OF POSITION = 2.18443&3D &2
RST OF VELOCITY = 2.&333&2D-&1

1NM

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	2.1&396&D &2	4.303855&D-01	4.157313&D-&2	9.95&764&D-01	-9.997247&D-&1	-3.405165&D-02
2	4.303855&D-&1	4.134695&D &1	1.978534&D-&1	3.393436&D-&1	-4.113212&D-01	-7.539571&D-&2
3	4.157313&D-&2	1.978534&D-&1	1.926&433D &2	2.1&357&&D-&2	-3.692424&D-&2	4.529433&D-01
4	9.95&764&D-&1	3.393436&D-&1	2.1&357&&D-&2	2.579355&D-01	-9.967&&&D-&1	-3.&&&5446D-02
5	-9.997247&D-&1	-4.113212&D-&1	-3.692424&D-&2	-9.967&&&D-01	1.405337&D-&1	3.&&7&28D-02
6	-3.405165&D-&2	-7.539571&D-&2	4.529433&D-&1	-3.&&&5446D-&2	3.&&7&28D-&2	9.911313&D-02

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = &.&1&35&D &
MEAN MAGNITUDE OF VELOCITY = 2.44&45&D-&3
RST OF POSITION = 2.&&1&5&D &2
RST OF VELOCITY = &.1 &&&D-&1

DCA

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	2.781&&&7D &2	-&.378121&D-&1	4.&&93714D-&2	&.&&&&75D-&1	-&.&&&543D-&1	-&.&&&&4D-&2
2	-&.378121&D-&1	1.&&13347D &2	1.239582&D-&2	-&.&19345D-&1	&.&&1&77D-&1	-&.&&&&4D-&3
3	4.&&&37&D-&2	1.&&&&82&D-&2	1.959&37&D &2	2.&&&&5&D-&2	-4.&&&&4D-&2	-1.&&&&4D-&1
4	&.&&&&75D-&1	-&.&19345D-&1	2.&&&&5&D-&2	3.&&&&5&D-&1	-&.&&&&4D-&1	-6.&&&&3D-&2
5	-&.&&&543D-&1	&.&&1&77D-&1	-4.&&&&4D-&2	-&.&&&&4D-&1	&.&&&&2D-&1	7.&&&&2D-&2
6	-&.&&&&4D-&2	-&.&&&&4D-&3	-1.&&&&4D-&1	-6.&&&&3D-&2	7.&&&&2D-&2	&.&&&&3D-&2

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION = &.&&&&&D &
MEAN MAGNITUDE OF VELOCITY = 1.&&&&&D-&2
RST OF POSITION = &.&&&&&D &2
RST OF VELOCITY = 4.&&&&&D-&1

Table 20. 9 Angles and Range, W ≠ D

MCC TRACKING EPOCH - AFTER TRACKING

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	4.69333160 01	7.24936500-01	-2.3686203D-02	-6.8391901D-01	-9.96867150-01	-6.3744691D-02
2	7.2493650D-01	7.81636880 00	-2.2790154D-01	-9.3812652D-01	-7.6205946D-01	1.4385221D-01
3	-2.3686203D-02	-2.2790154D-01	9.8226408D 01	9.6274899D-02	7.2207222D-02	-7.1276952D-01
4	-6.8391901D-01	-9.3812652D-01	9.6274899D-02	1.4433267D-02	7.3609118D-01	-1.4245310D-01
5	-9.9686715D-01	-7.6205946D-01	2.2207222D-02	7.3609118D-01	1.5960732D-01	4.8447165D-02
6	-6.3744691D-02	1.4385221D-01	-7.1276952D-01	-1.4245310D-01	4.8447165D-02	1.8503608D-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	1.4467256D 00
MEAN MAGNITUDE OF VELOCITY =	4.9111243D-03
RST OF POSITION =	1.0910038D 02
PST OF VELOCITY =	2.4472281D-01

MCC

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	8.54675110 01	9.6495338D-01	3.7899473D-02	9.9760703D-01	3.8026902D-01	4.2575997D-03
2	9.6495338D-01	9.5913978D 01	1.0758898D-01	9.4589255D-01	6.9210967D-01	3.0398639D-02
3	3.7899473D-02	1.0758898D-01	1.1624637D 02	1.8753037D-02	2.5553440D-01	7.6353776D-01
4	9.9760703D-01	9.4589255D-01	1.8753037D-02	1.3069933D-01	3.2747410D-01	-1.2217977D-02
5	3.8026902D-01	6.9210967D-01	2.5553440D-01	3.2747410D-01	8.4461662D-03	1.6802378D-02
6	4.2575997D-03	3.0398639D-02	7.6353776D-01	-1.2217977D-02	1.6802378D-02	1.7009831D-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	4.6015200D 00
MEAN MAGNITUDE OF VELOCITY =	1.4655944D-03
RST OF POSITION =	1.7312119D 02
RST OF VELOCITY =	2.1467902D-01

1NM

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	2.0091203D 02	-3.9222881D-01	3.2298414D-02	9.9924301D-01	-9.9980965D-01	-2.4568336D-02
2	-3.9222881D-01	2.4251395D 01	1.9596651D-01	-4.4497463D-01	4.0743412D-01	-8.3200969D-03
3	3.2298414D-02	1.9596651D-01	1.6262717D 02	1.7893032D-02	-2.8491886D-02	6.6009163D-01
4	9.9924301D-01	-4.4497463D-01	1.7893032D-02	2.7468289D-01	-9.9995150D-01	-2.6908147D-02
5	-9.9980965D-01	4.0743412D-01	-2.8491886D-02	-9.9995150D-01	1.3274330D-01	2.2335945D-02
6	-2.4568336D-02	8.3200969D-03	6.6009163D-01	-2.6908147D-02	2.2335945D-02	1.7421964D-01

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	5.0826878D 00
MEAN MAGNITUDE OF VELOCITY =	8.4302322D-04
RST OF POSITION =	2.5981219D 02
RST OF VELOCITY =	3.2239673D-01

DCA

CORRESPONDING CORRELATION MATRIX

	1	2	3	4	5	6
1	2.6494402D 02	-9.8877224D-01	3.1276418D-02	9.9878629D-01	-9.9995443D-01	-6.7213086D-02
2	-9.8877224D-01	1.2467677D 02	-1.2831955D-03	-9.8934741D-01	9.8158002D-01	1.9566466D-02
3	3.1276418D-02	-1.2831955D-03	1.7356996D 02	2.1707469D-02	-3.1866984D-02	2.3996693D-01
4	9.9878629D-01	-9.8934741D-01	2.1707469D-02	3.8723371D-01	-9.9887003D-01	-5.8788324D-02
5	-9.9995443D 01	9.8158002D-01	-3.1866984D-02	-9.9887003D-01	2.1817497D-01	6.4362019D-02
6	-6.7213086D-02	1.9566466D-02	2.3996693D-01	-5.8788324D-02	6.4362019D-02	7.5763942D-02

UNCERTAINTY UVW

MEAN MAGNITUDE OF POSITION =	9.3624799D 00
MEAN MAGNITUDE OF VELOCITY =	1.2009350D-02
RST OF POSITION =	2.4039117D 02
RST OF VELOCITY =	4.4612436D-01

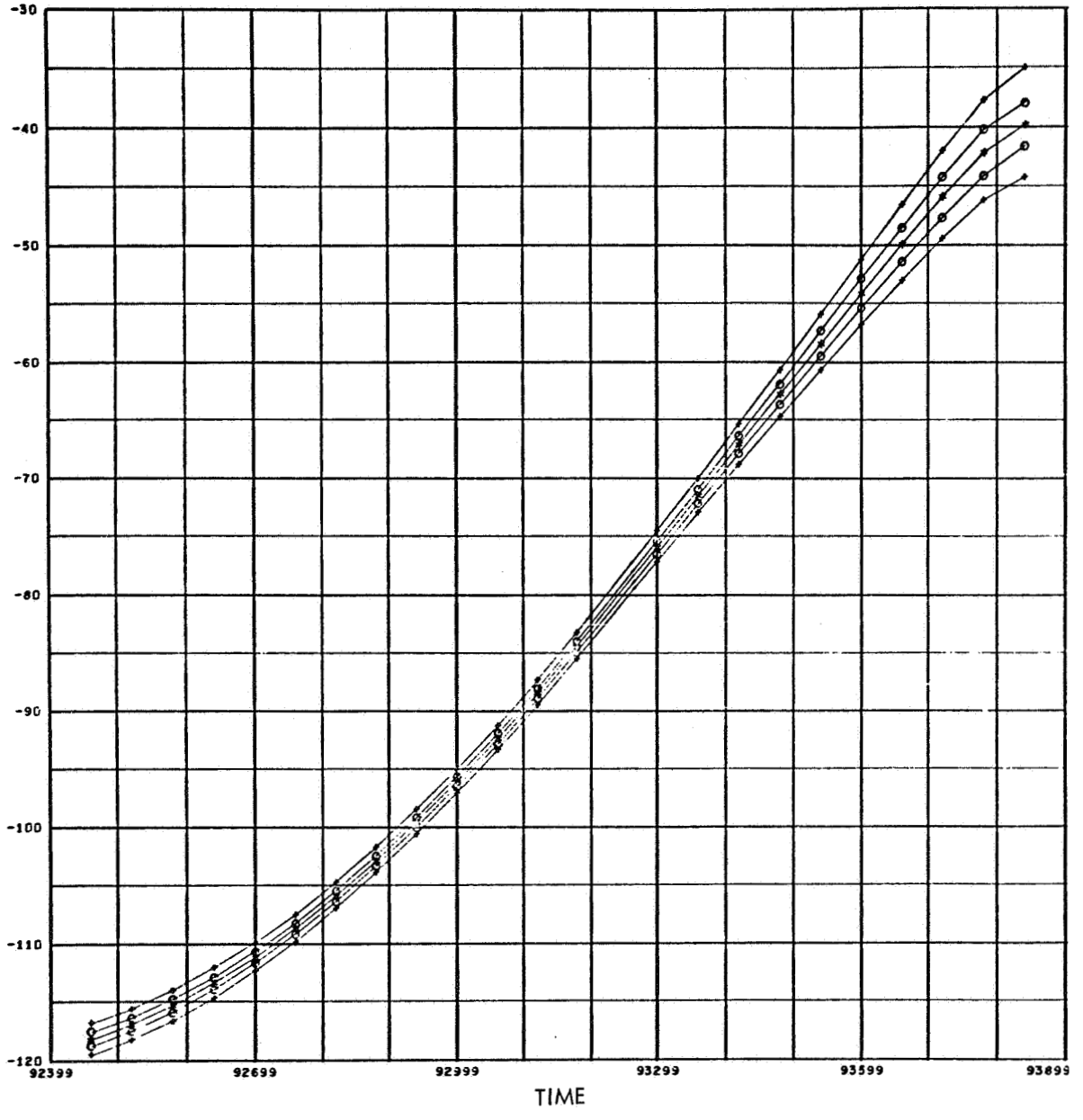

Figure 2. Relative Range Rate with Angle Tracking from TPI to MCC

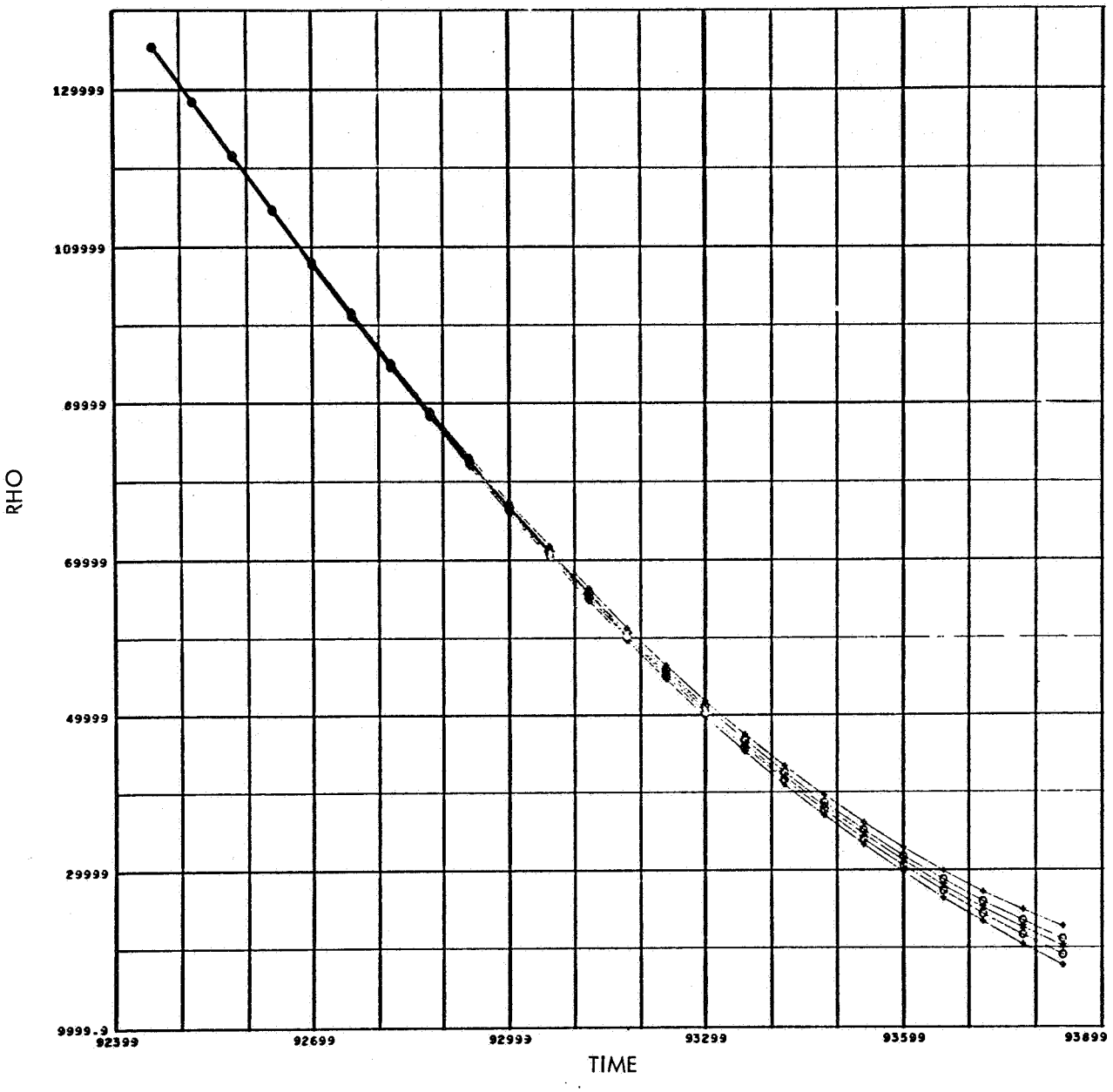

Figure 3. Relative Range with Angle Tracking from TPI to MCC

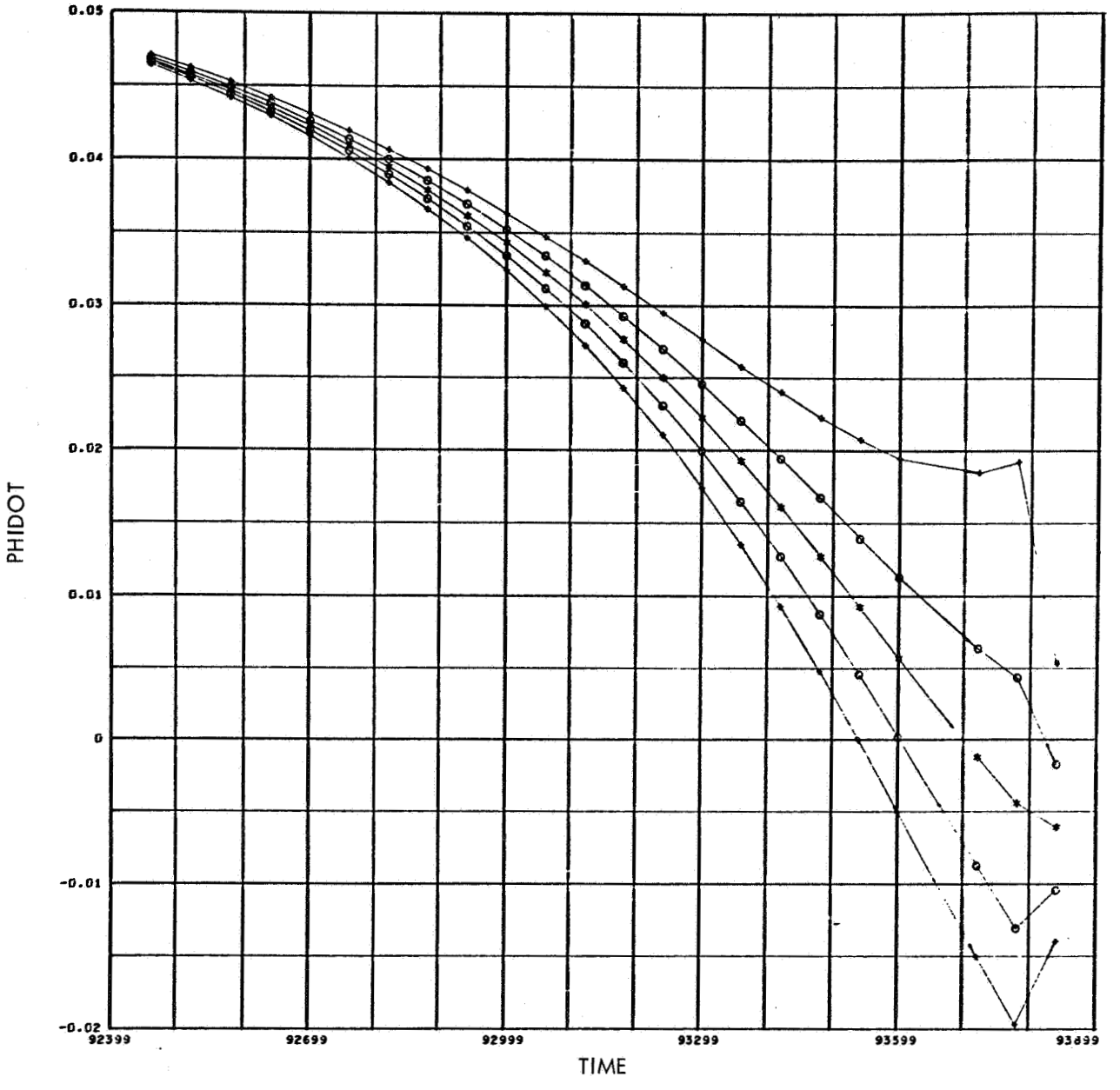

Figure 4. Inertial Inplane Line-of-sight Rate with Angle Tracking from TPI to MCC

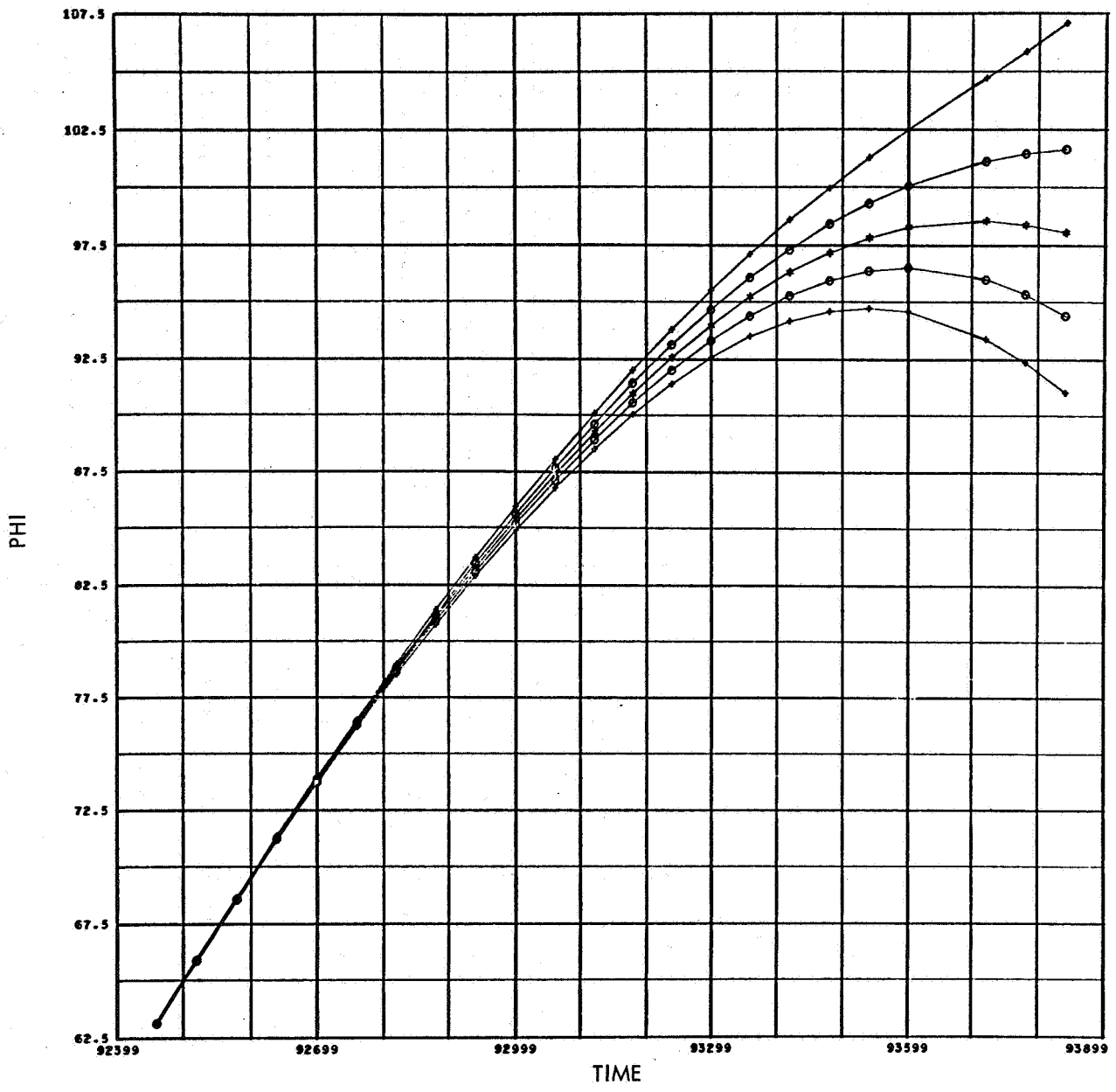

Figure 5. Inertial Inplane Angle with Angle Tracking from TPI to MCC

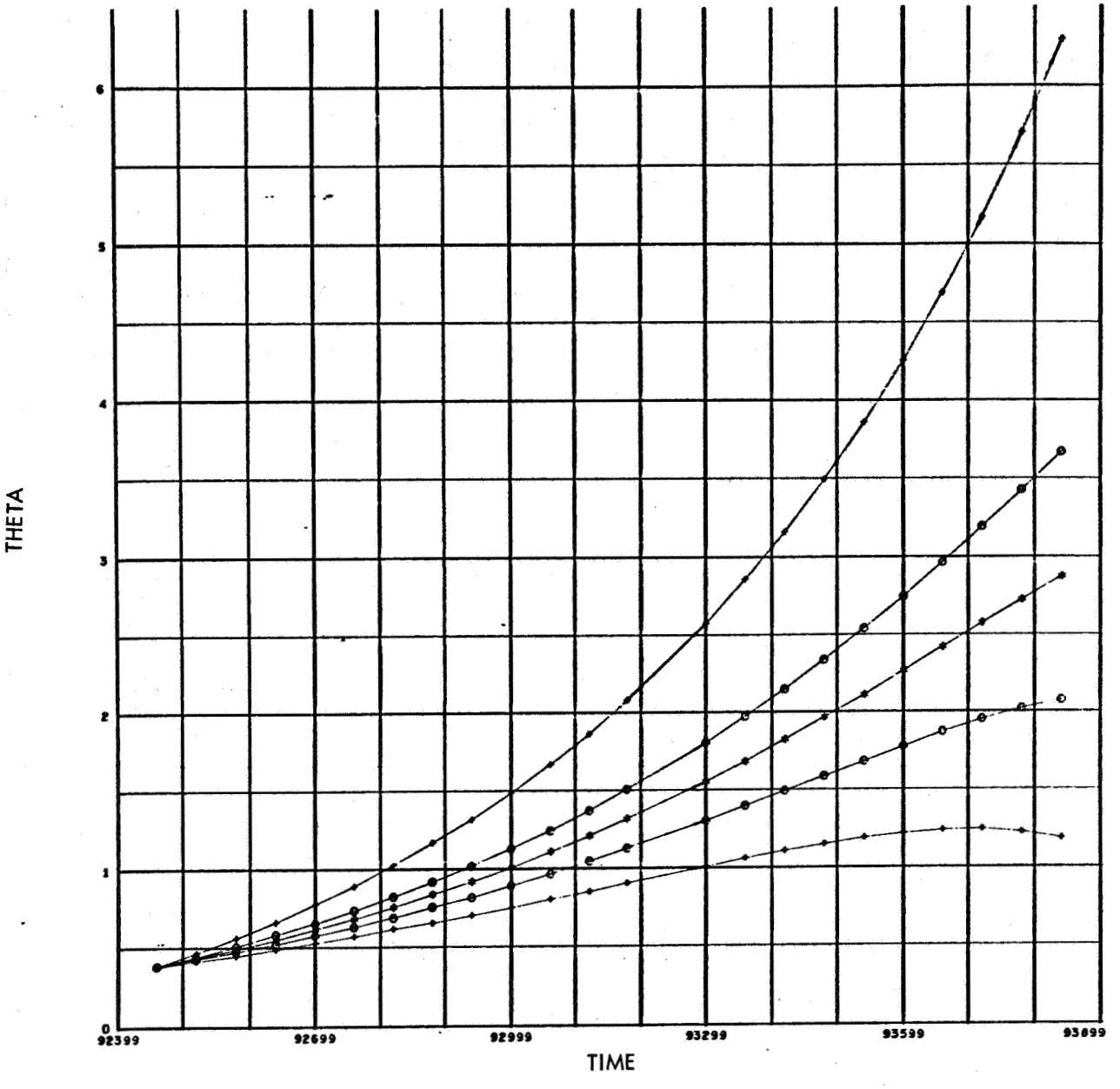

Figure 6. Out-of-plane Angle with Angle Tracking from TPI to MCC

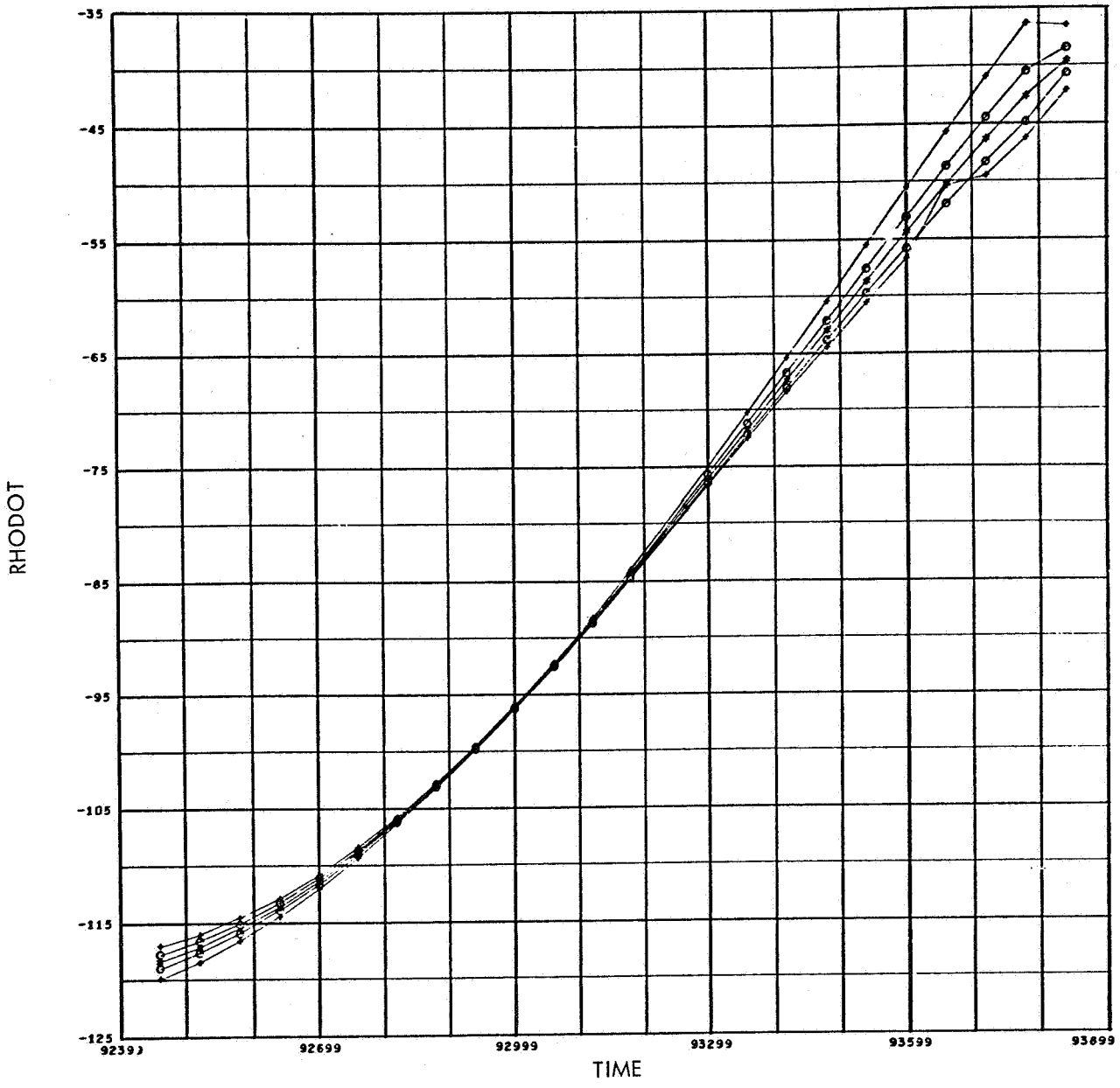

Figure 7. Relative Range Rate with Angle and Range Tracking from TPI to MCC

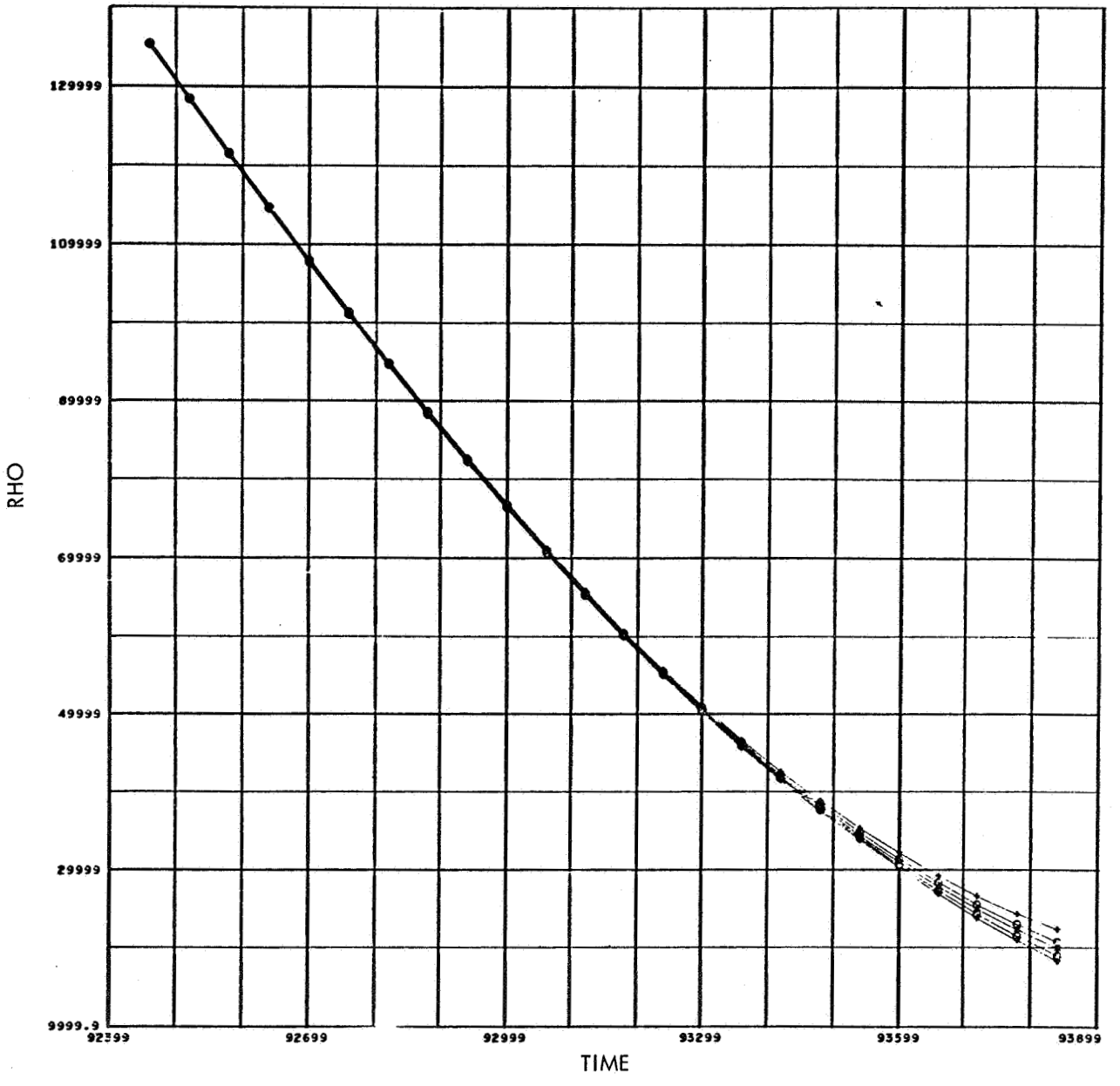

Figure 8. Relative Range with Angle and Range Tracking from TPI to MCC

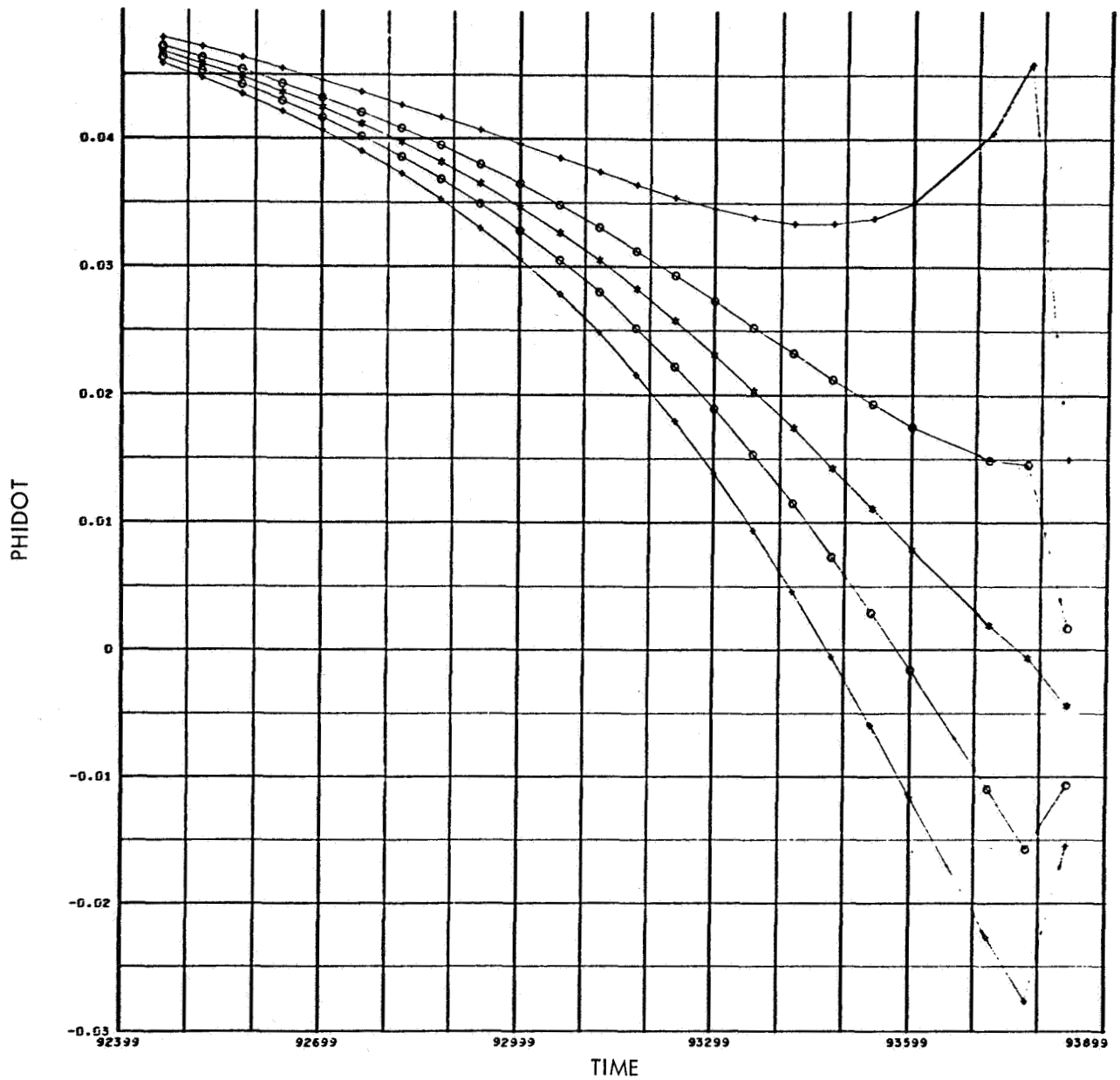

Figure 9. Inertial Inplane Line-of-sight Rate with Angle and Range Tracking from TPI to MCC

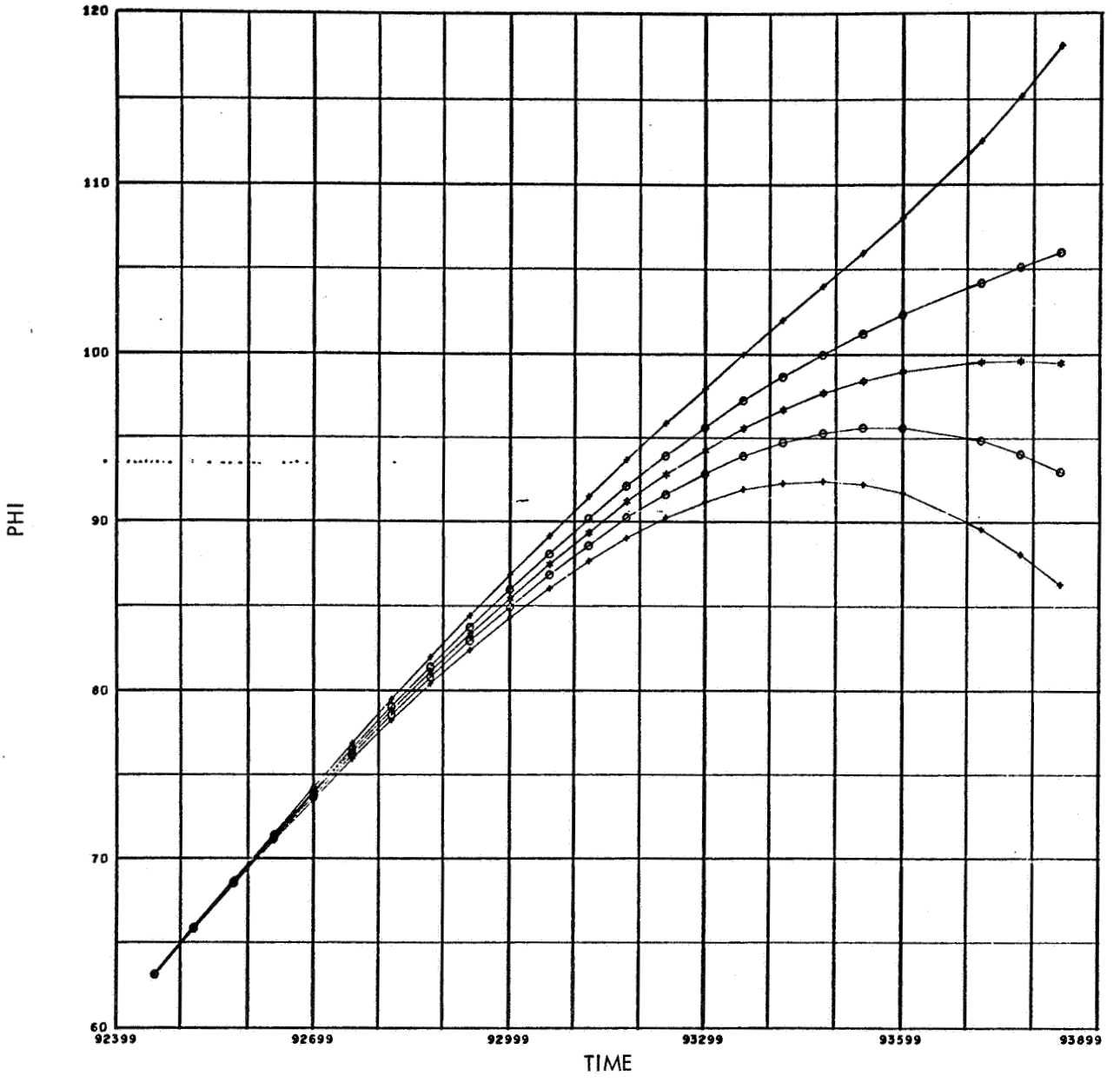

Figure 10. Inertial Inplane Angle with Angle and Range Tracking from TPI to MCC

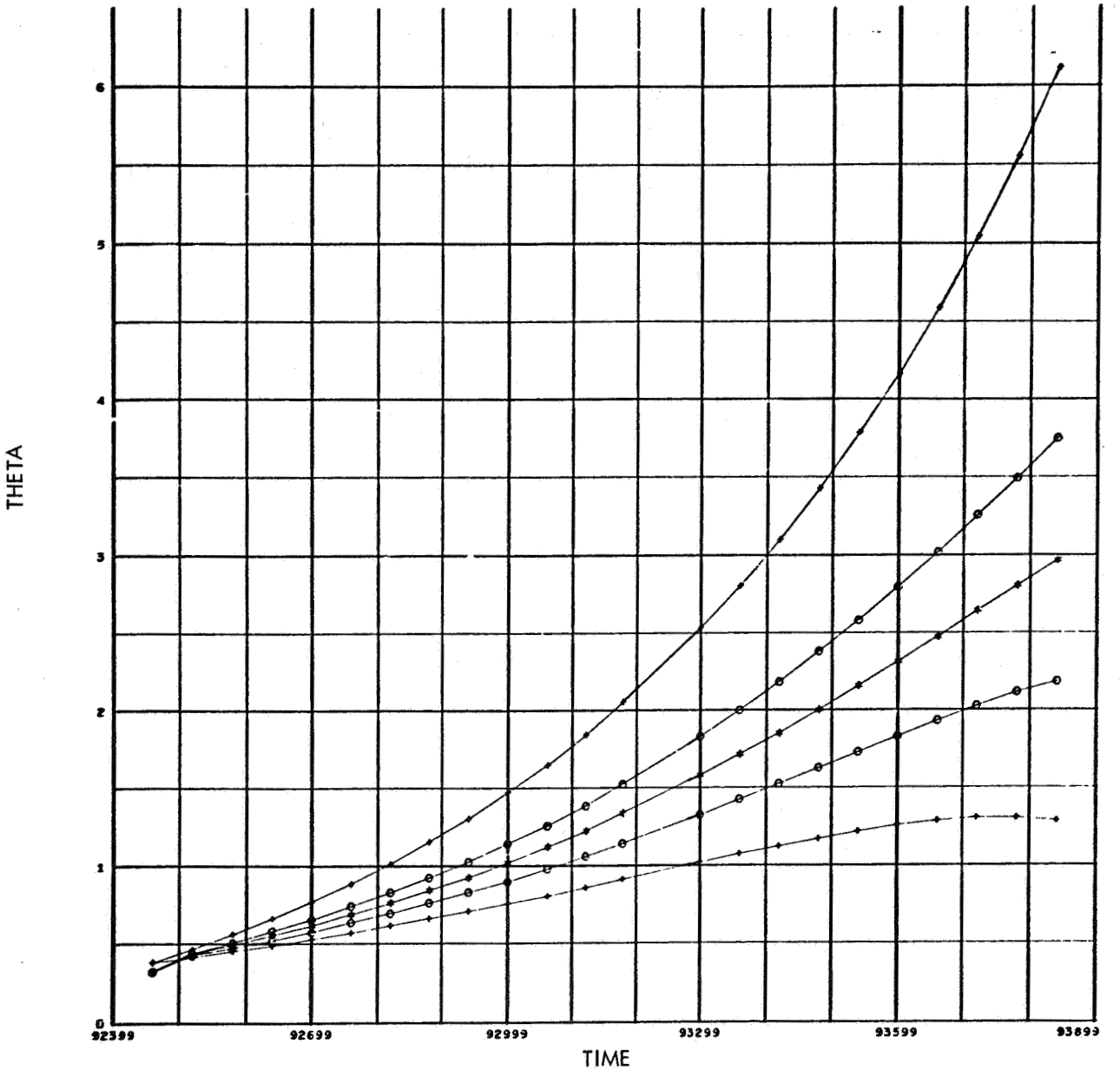

Figure 11. Out-of-plane Angle with Angle and Range Tracking from TPI to MCC

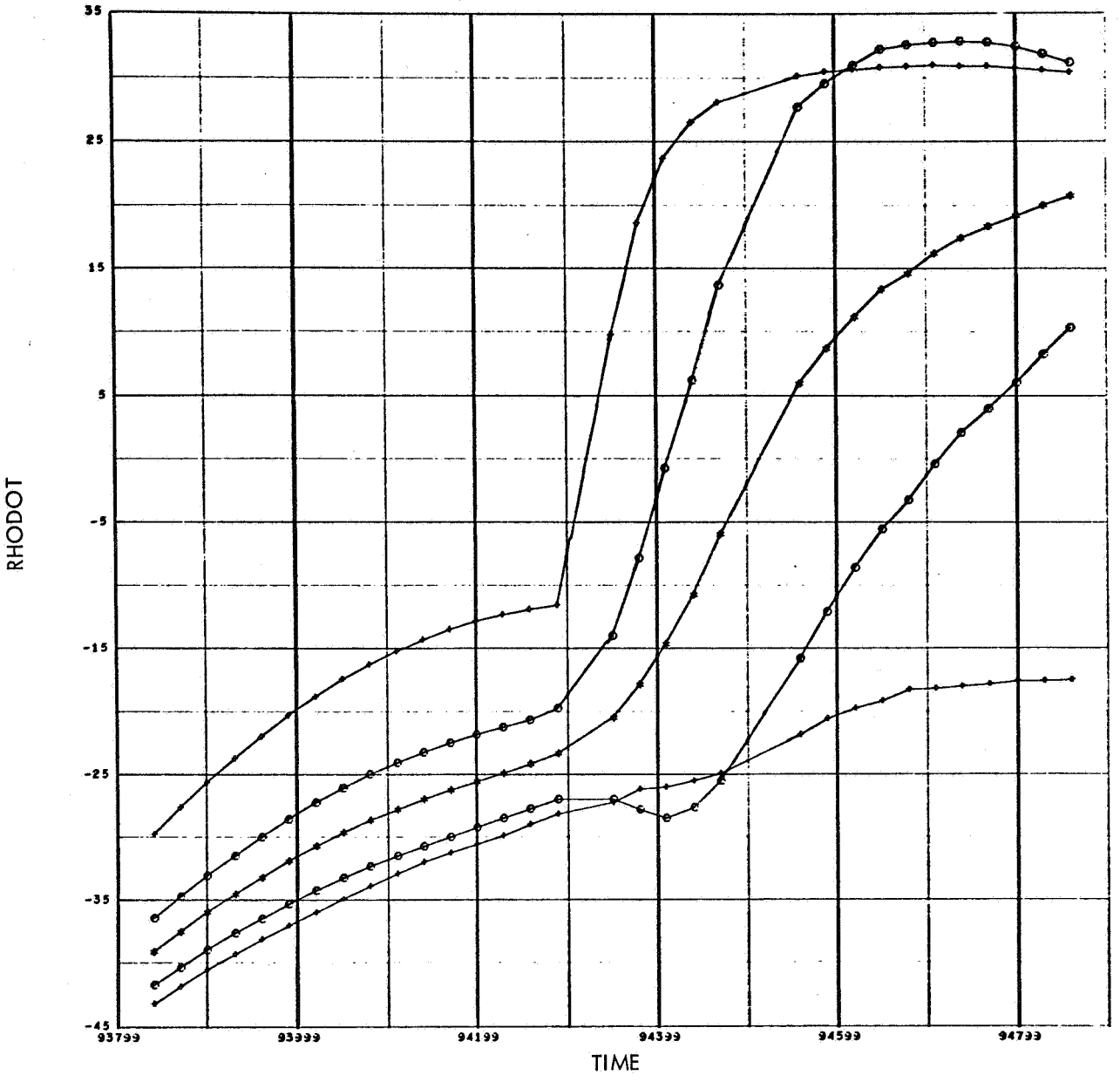

Figure 12. Relative Range Rate with 0 Marks Angle Tracking and Diagonal Weighting Matrix from MCC to TPF

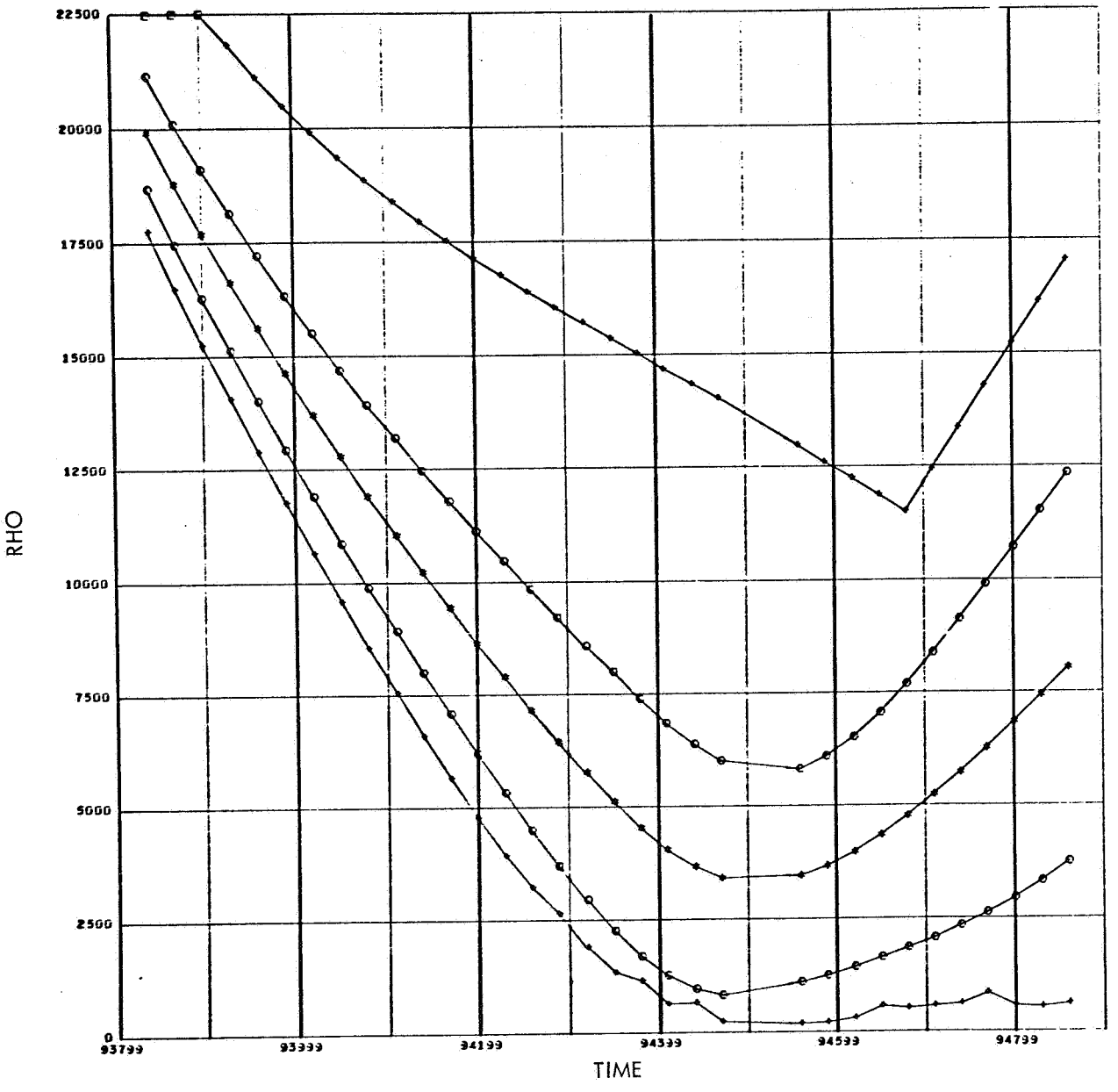

Figure 13. Relative Range with 0 Marks Angle Tracking and Diagonal Weighting Matrix from MCC to TPF

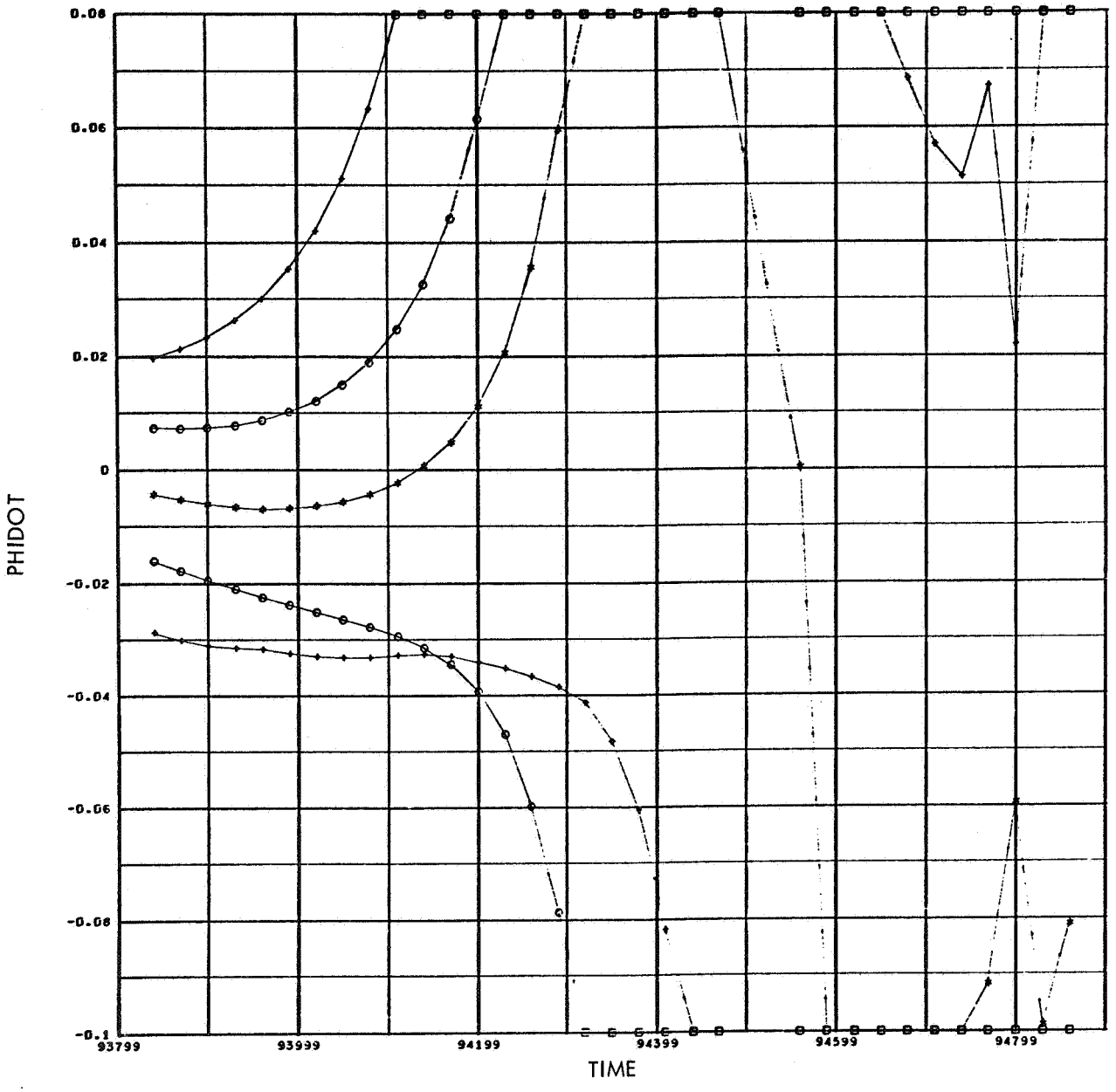

Figure 14. Inplane Line-of-sight Rate with 0 Marks Angle Tracking and Diagonal Weighting Matrix from MCC to TPF

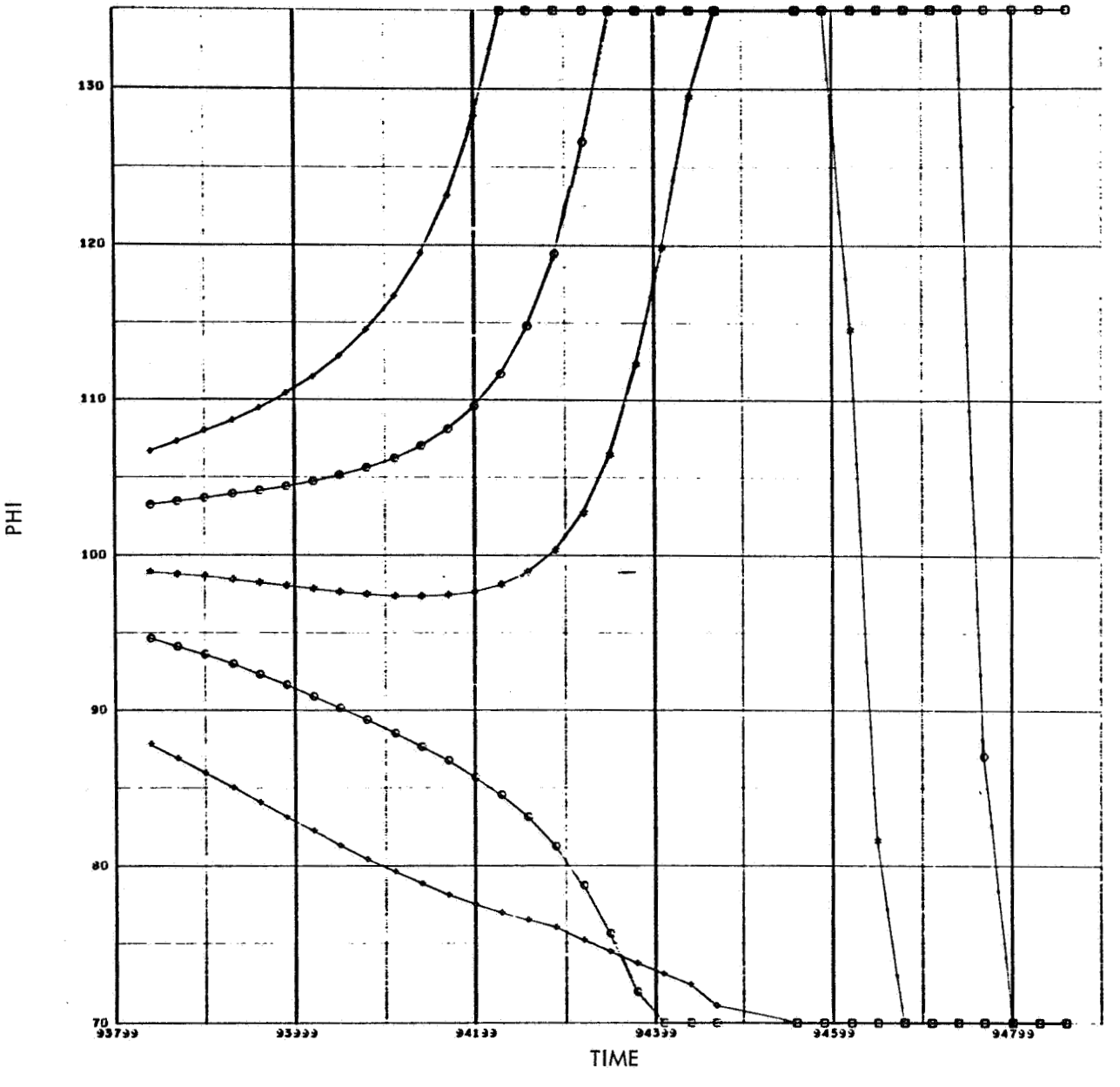

Figure 15. Inertial Inplane Angle with 0 Marks Angle Tracking and Diagonal Weighting Matrix from MCC to TPF

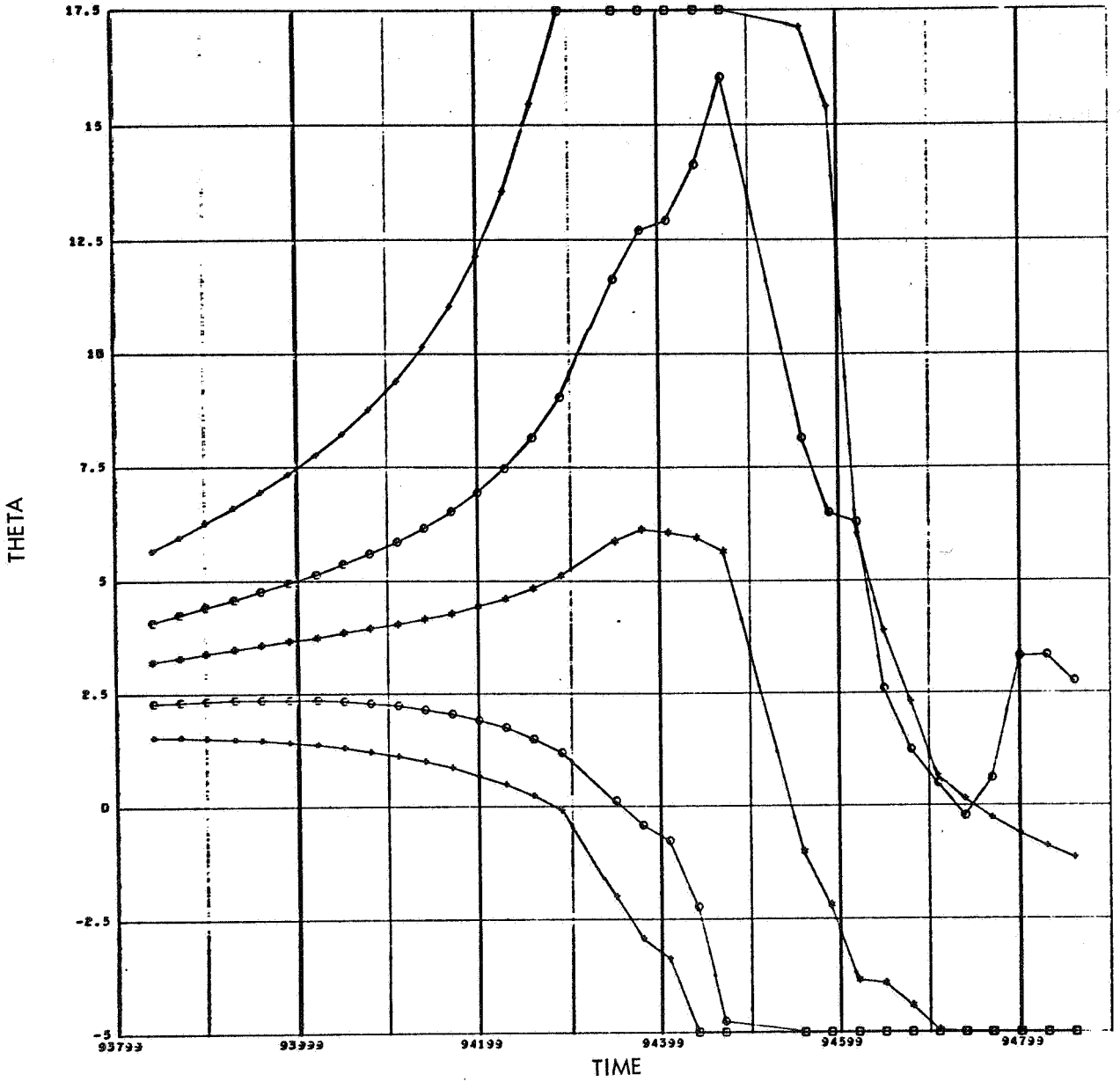

Figure 16. Out-of-plane Angle with 0 Marks Angle Tracking and Diagonal Weighting Matrix from MCC to TPF

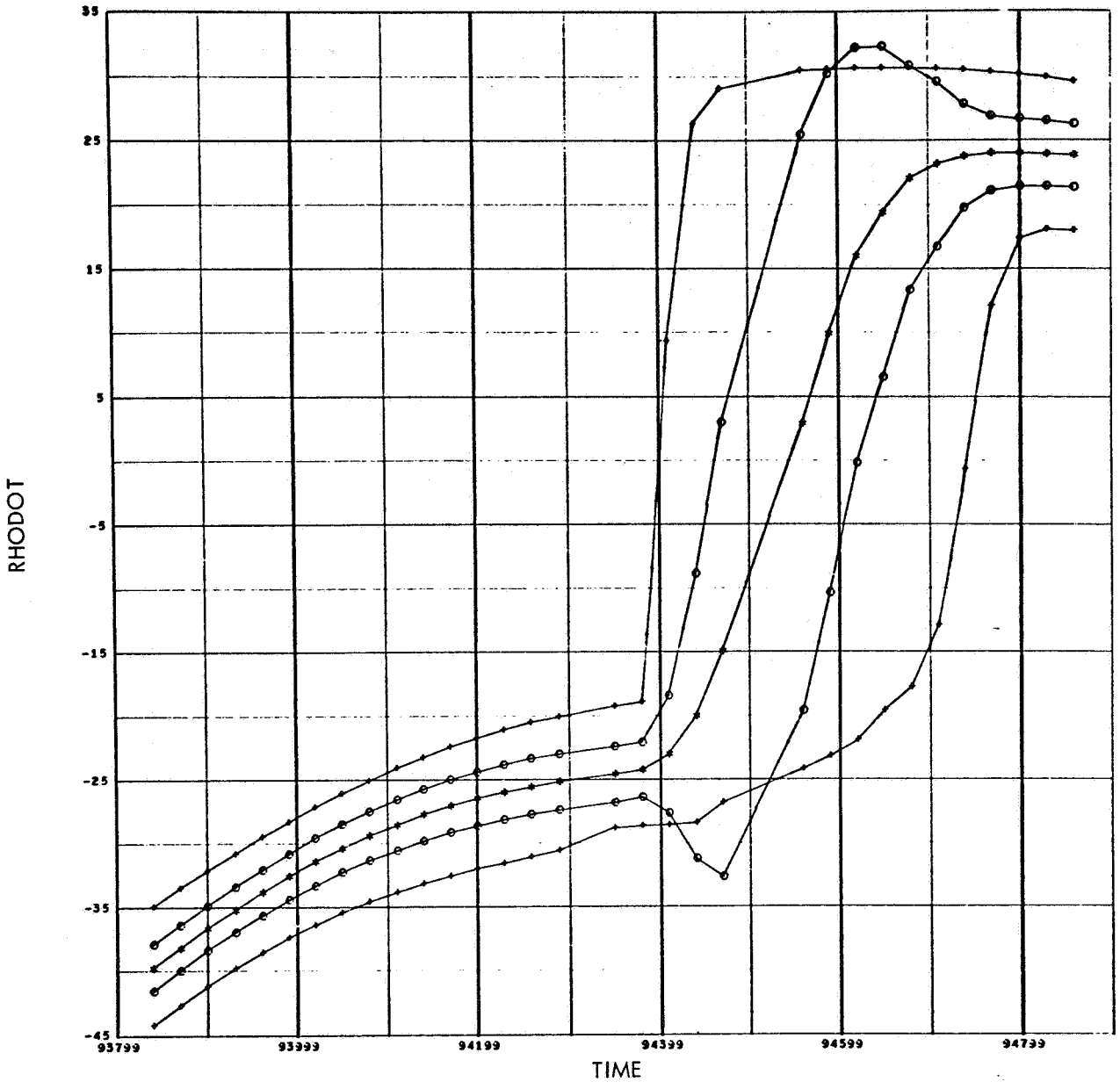

Figure 17. Relative Range Rate with 3 Marks Angle Tracking and Diagonal Weighting Matrix from MCC to TPF

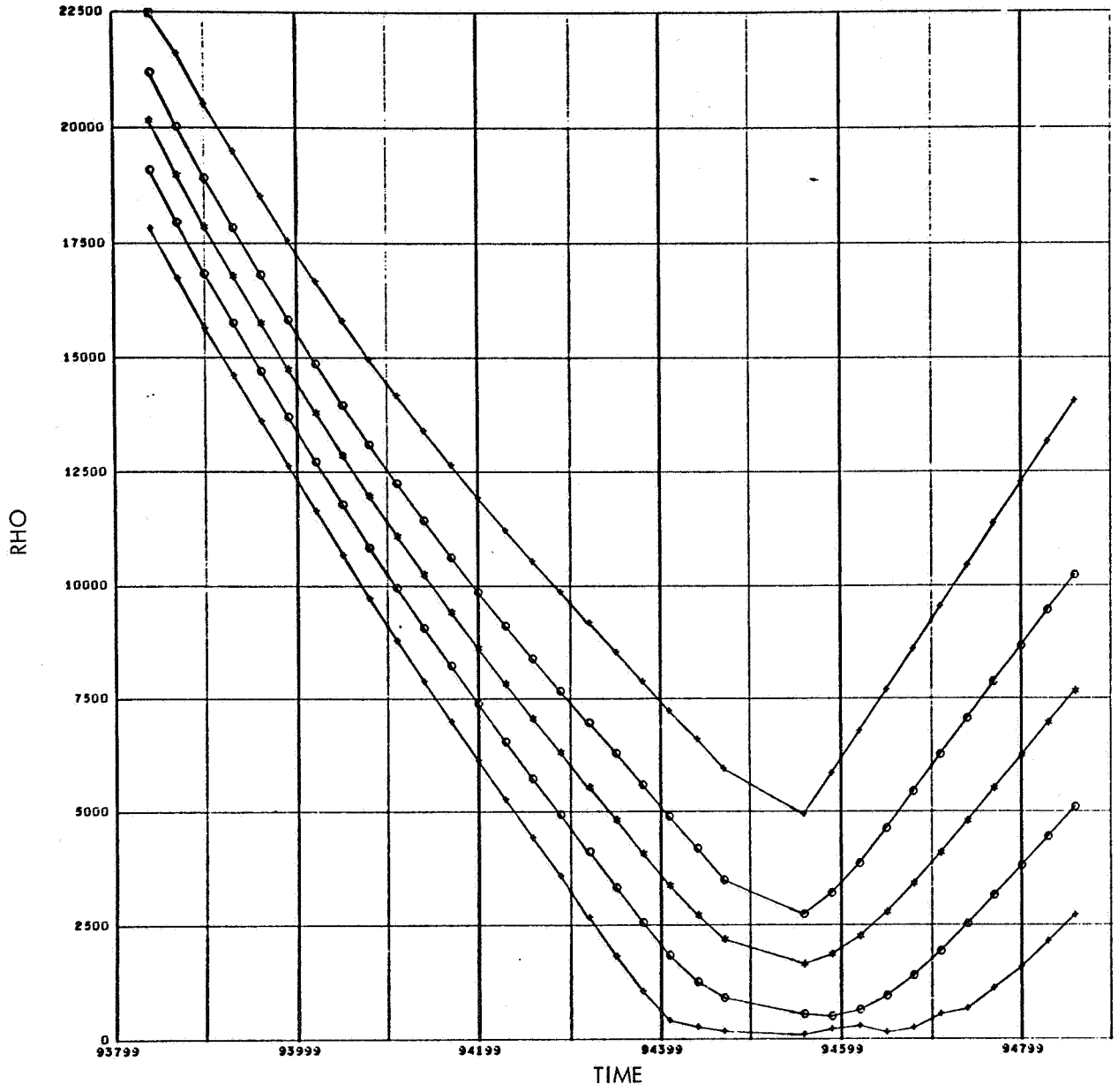

Figure 18. Relative Range with 3 Marks Angle Tracking and Diagonal Weighting Matrix from MCC to TPF

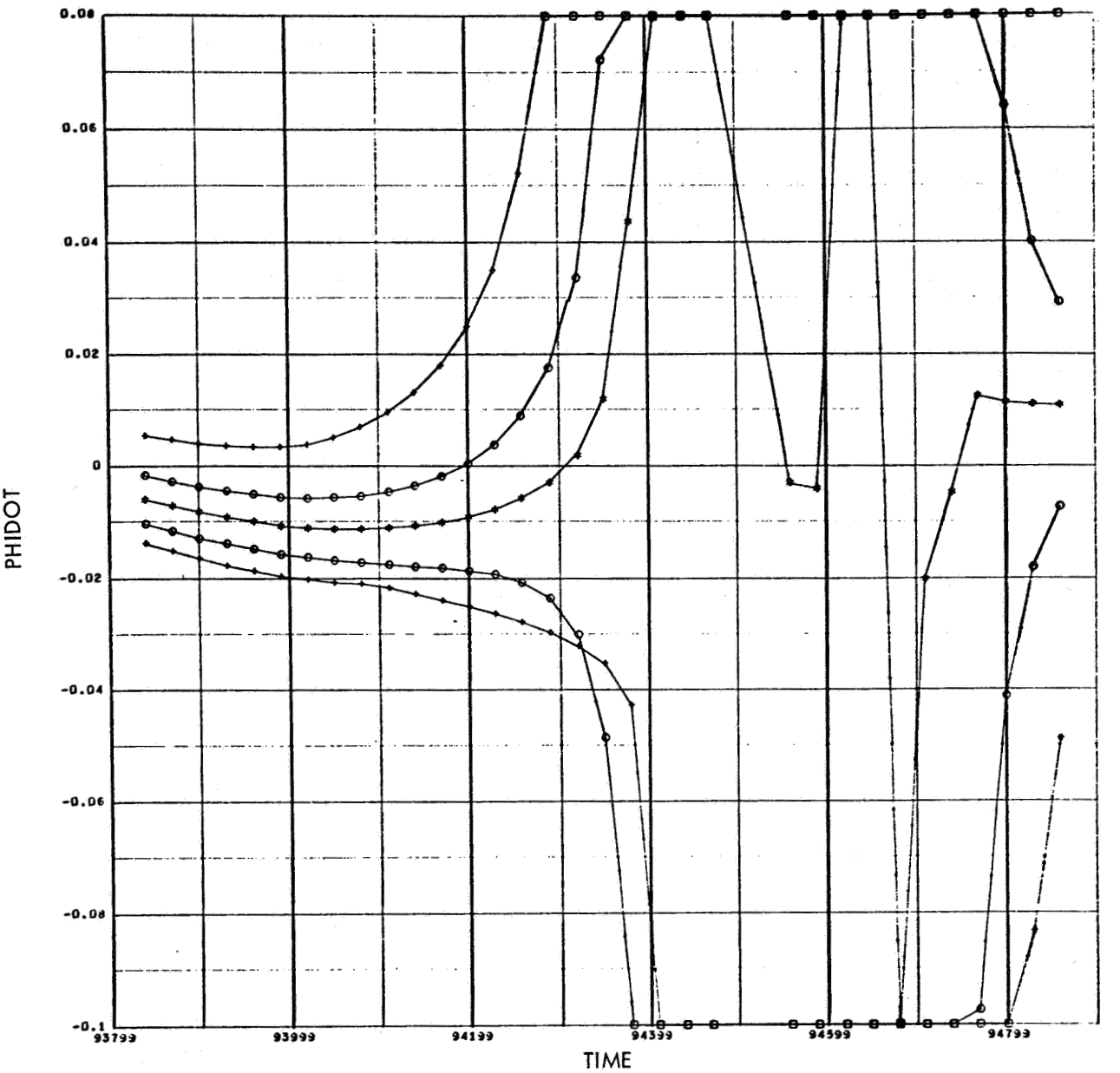

Figure 19. Inertial Inplane Line-of-sight Rate with 3 Marks Angle Tracking and Diagonal Weighting Matrix from MCC to TPF

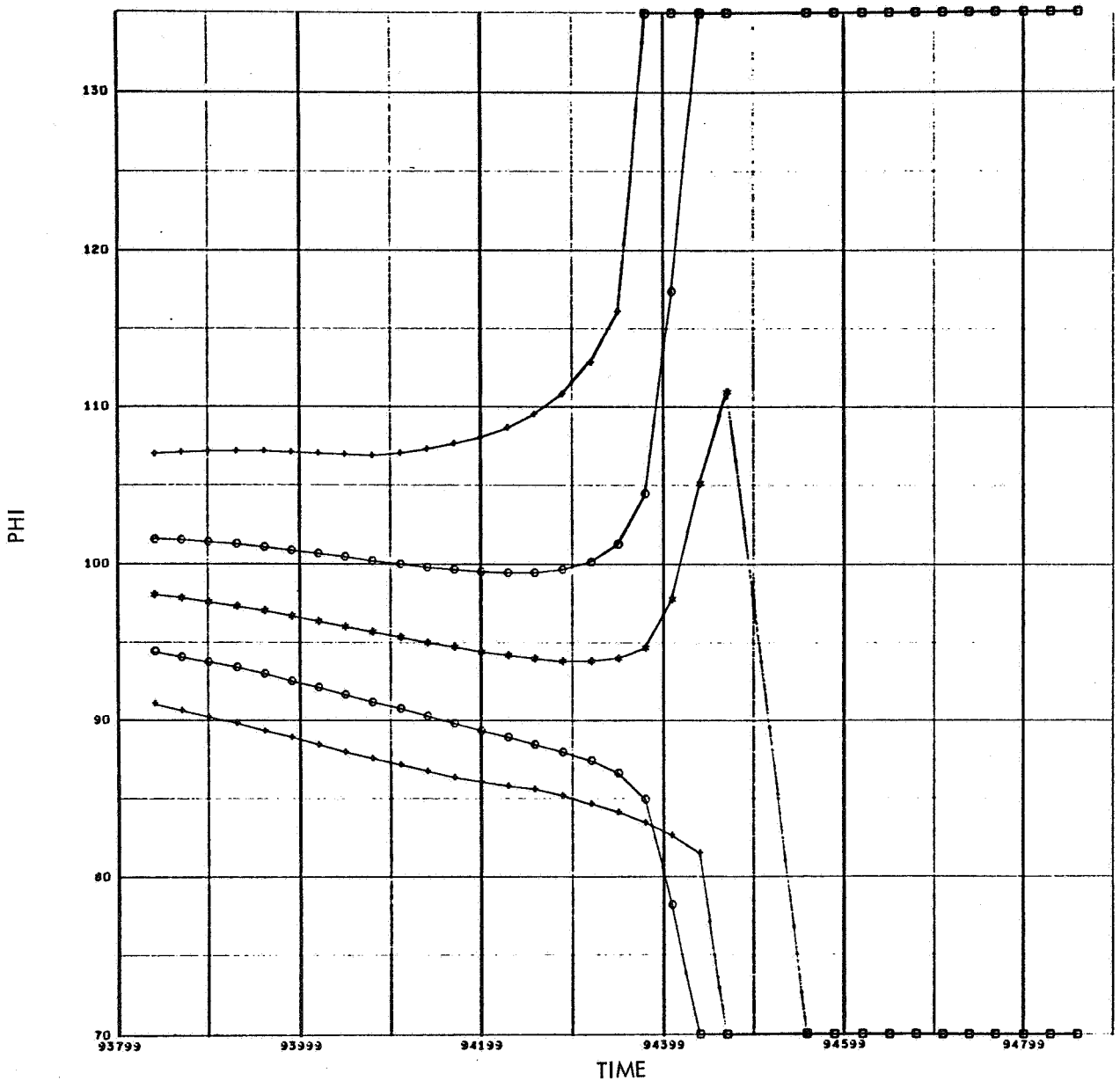

Figure 20. Inertial Inplane Angle with 3 Marks Angle Tracking and Diagonal Weighting Matrix from MCC to TPF

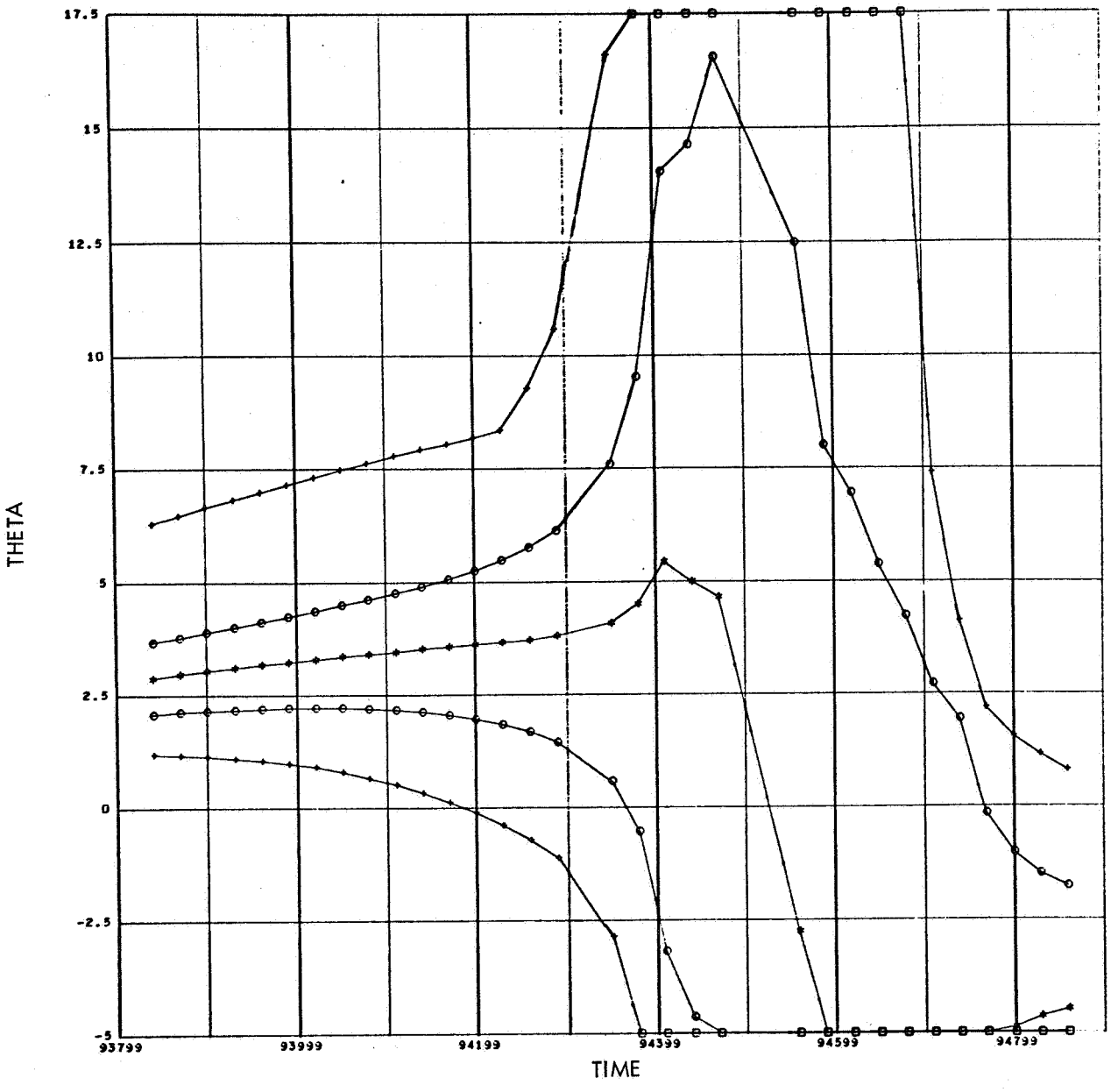

Figure 21. Out-of-plane Angle with 3 Marks Angle Tracking and Diagonal Weighting Matrix from MCC to TPF

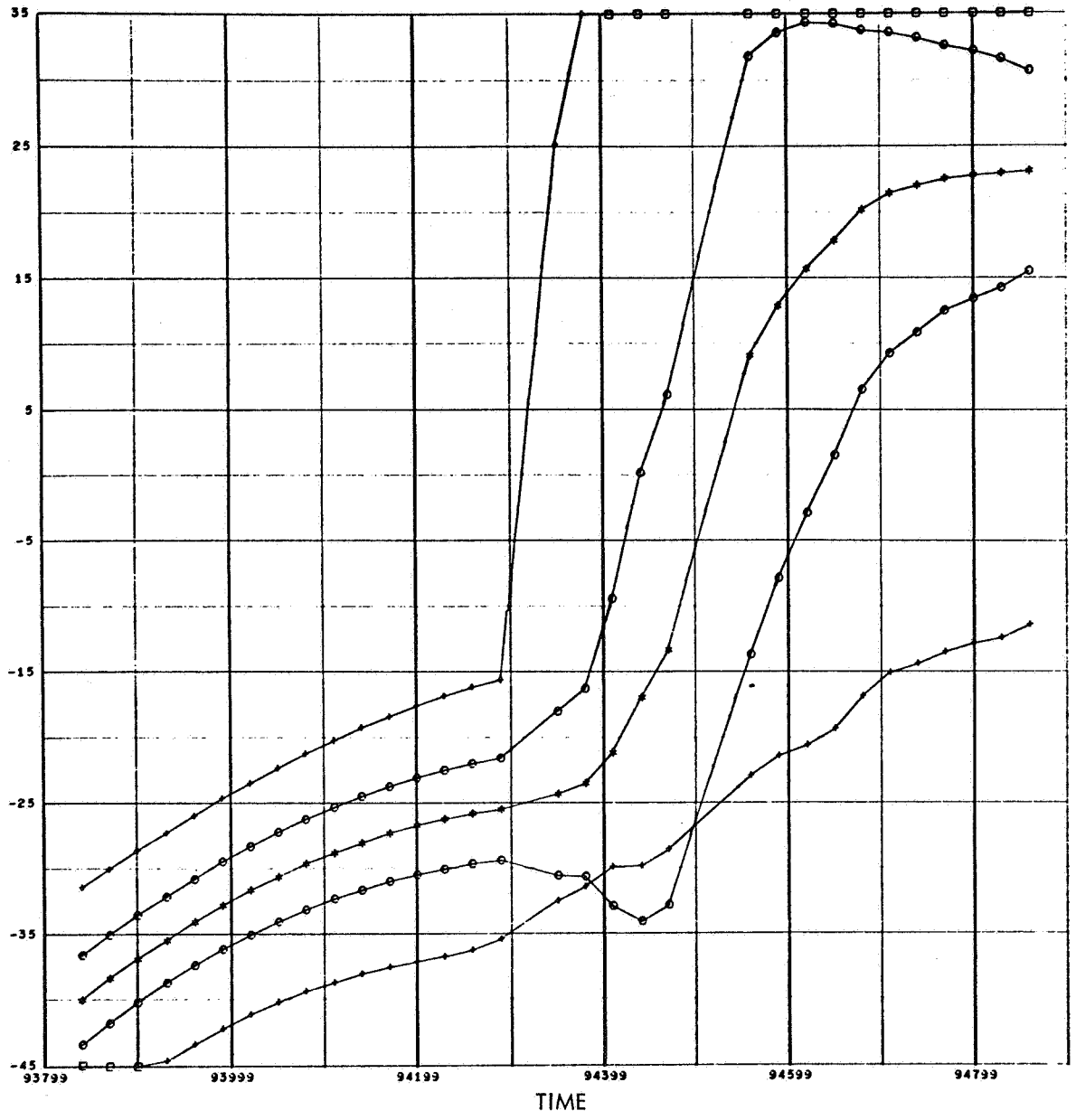

Figure 22. Relative Range Rate with 6 Marks Angle Tracking and Diagonal Weighting Matrix from MCC to TPF

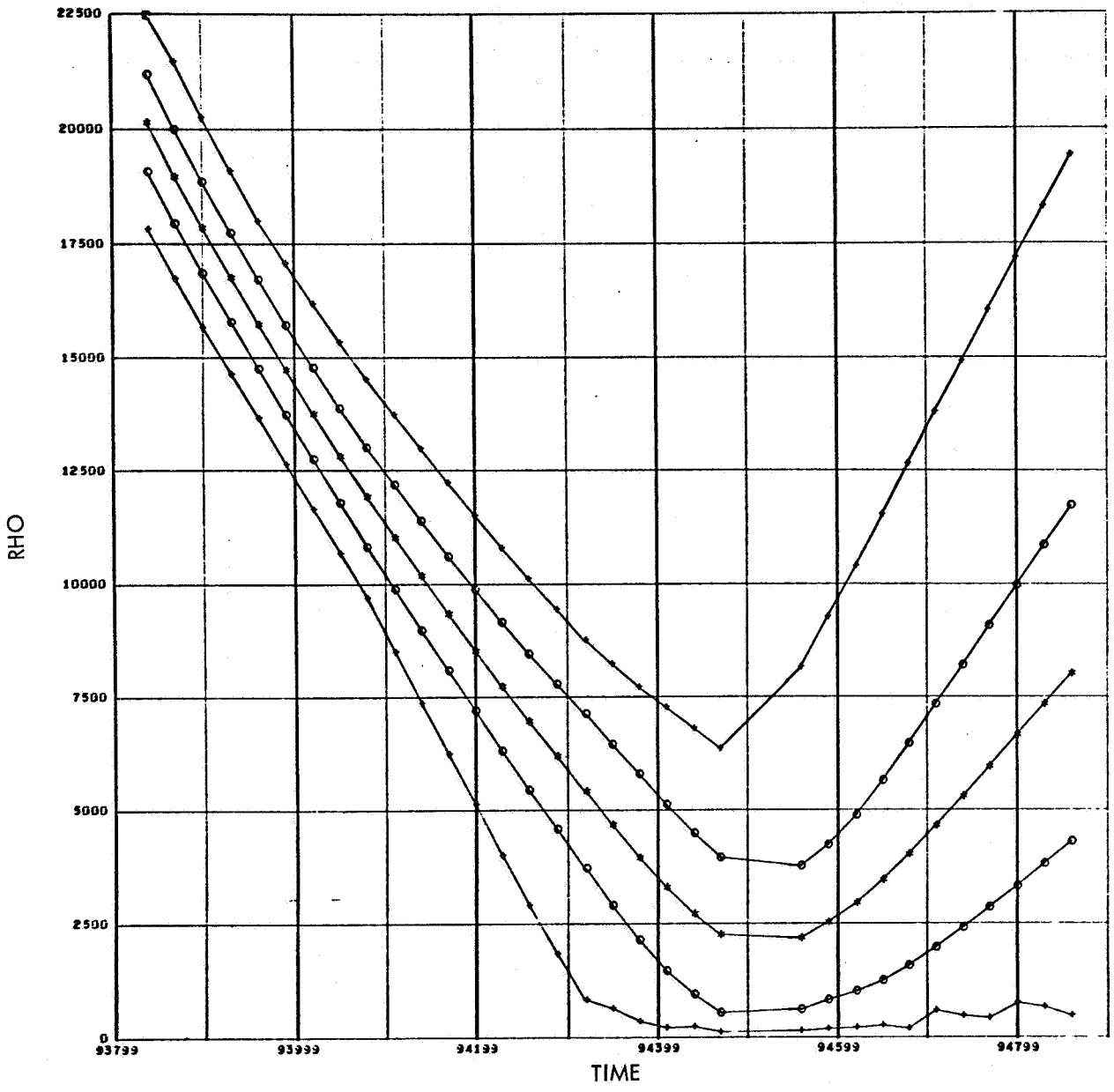

Figure 23. Relative Range with 6 Marks Angle Tracking and Diagonal Weighting Matrix from MCC to TPF

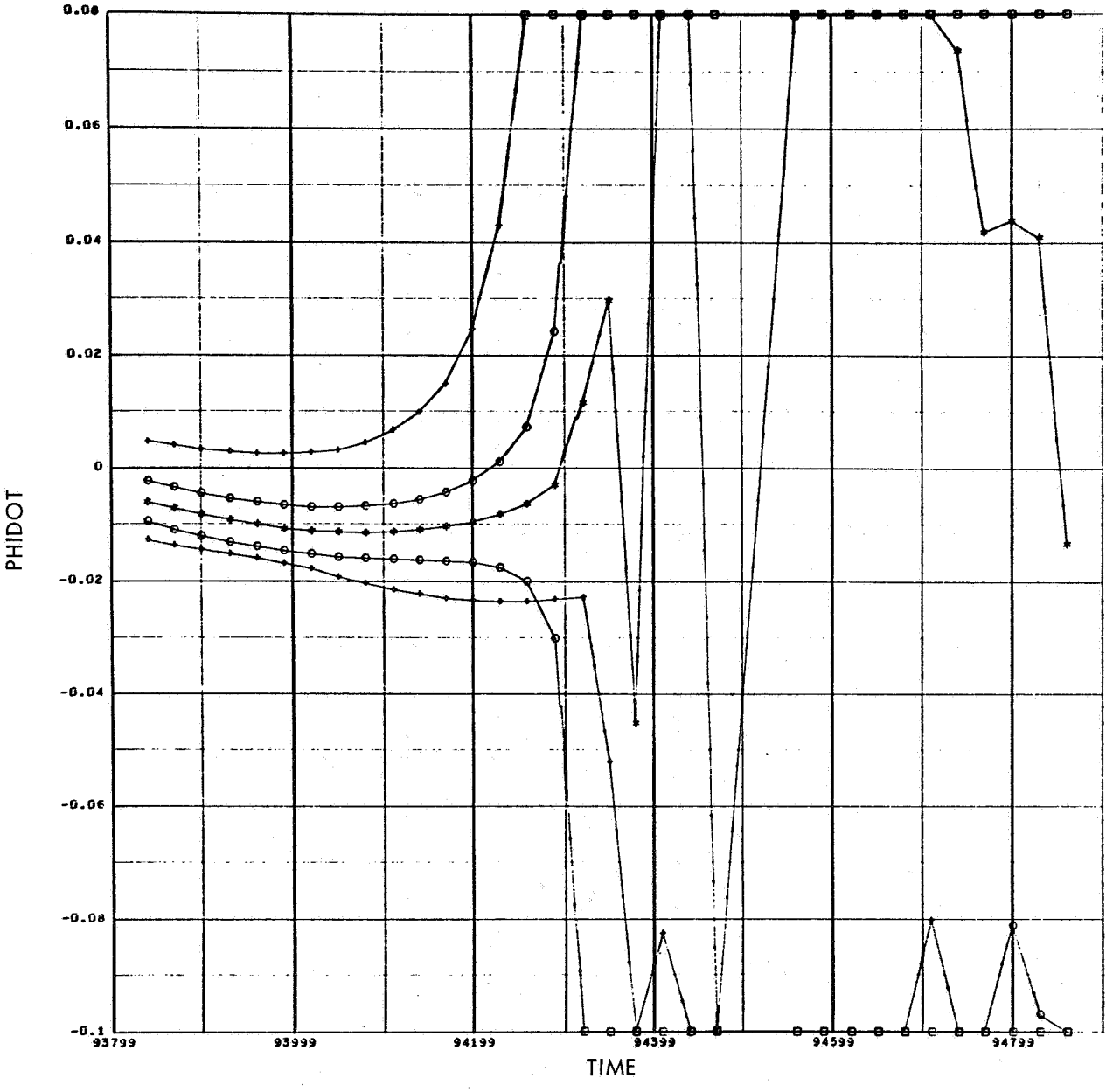

Figure 24. Inertial Inplane Line-of-sight Rate with 6 Marks Angle Tracking and Diagonal Weighting Matrix from MCC to TPF

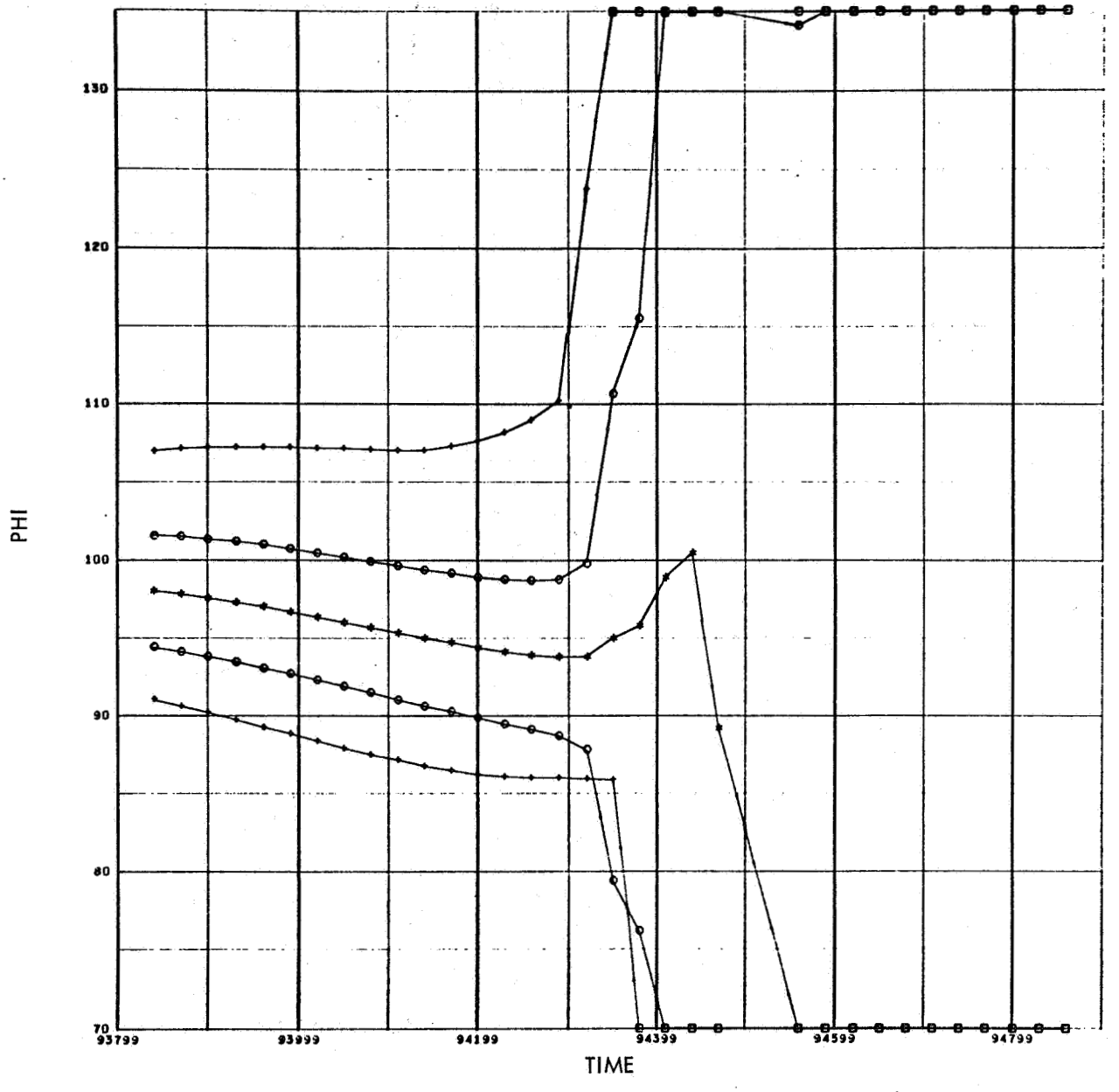

Figure 25. Inertial Inplane Angle with 6 Marks Angle Tracking and Diagonal Weighting Matrix from MCC to TPF

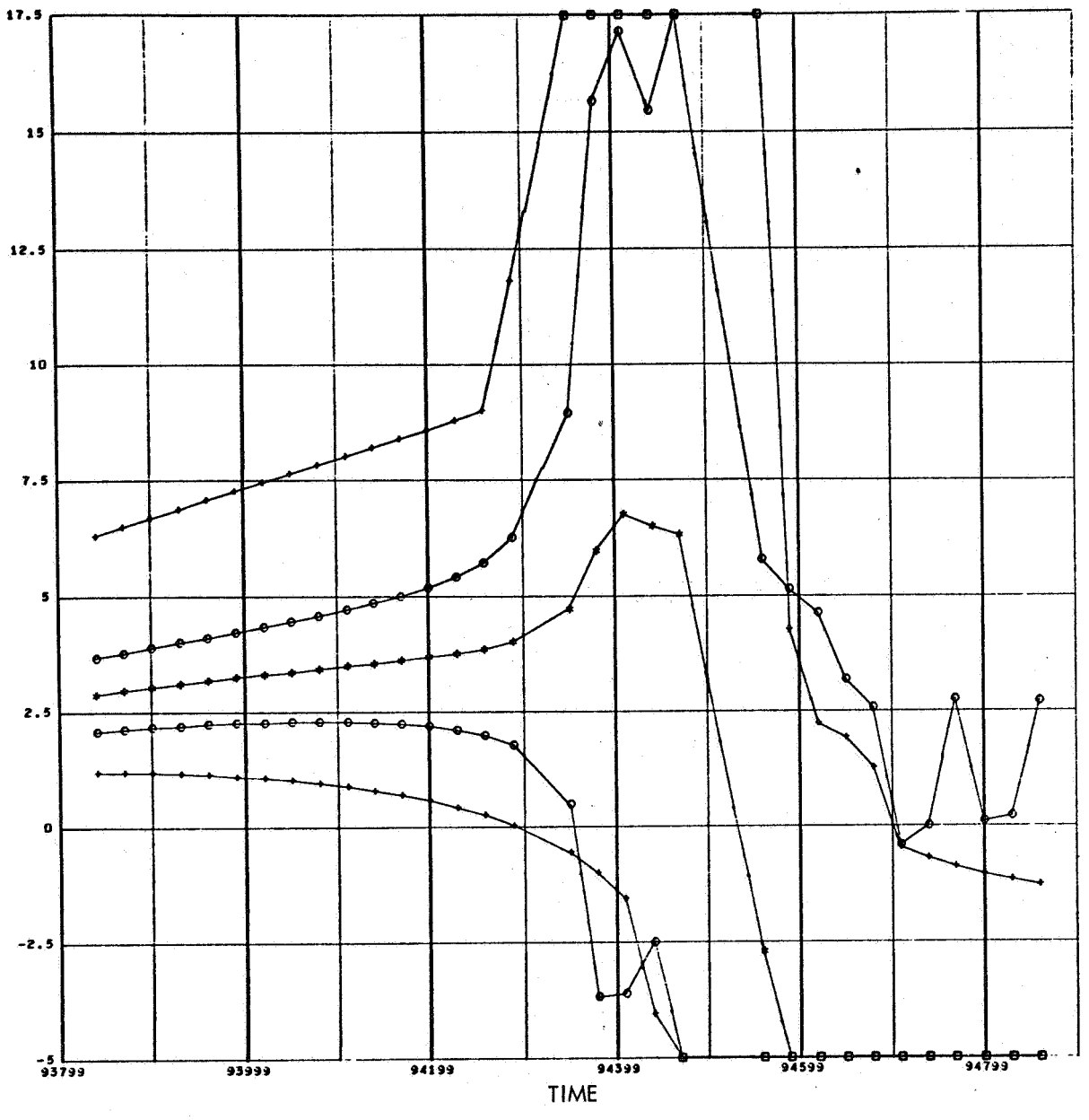

Figure 26. Out-of-plane Angle with 6 Marks Angle Tracking and Diagonal Weighting Matrix from MCC to TPF

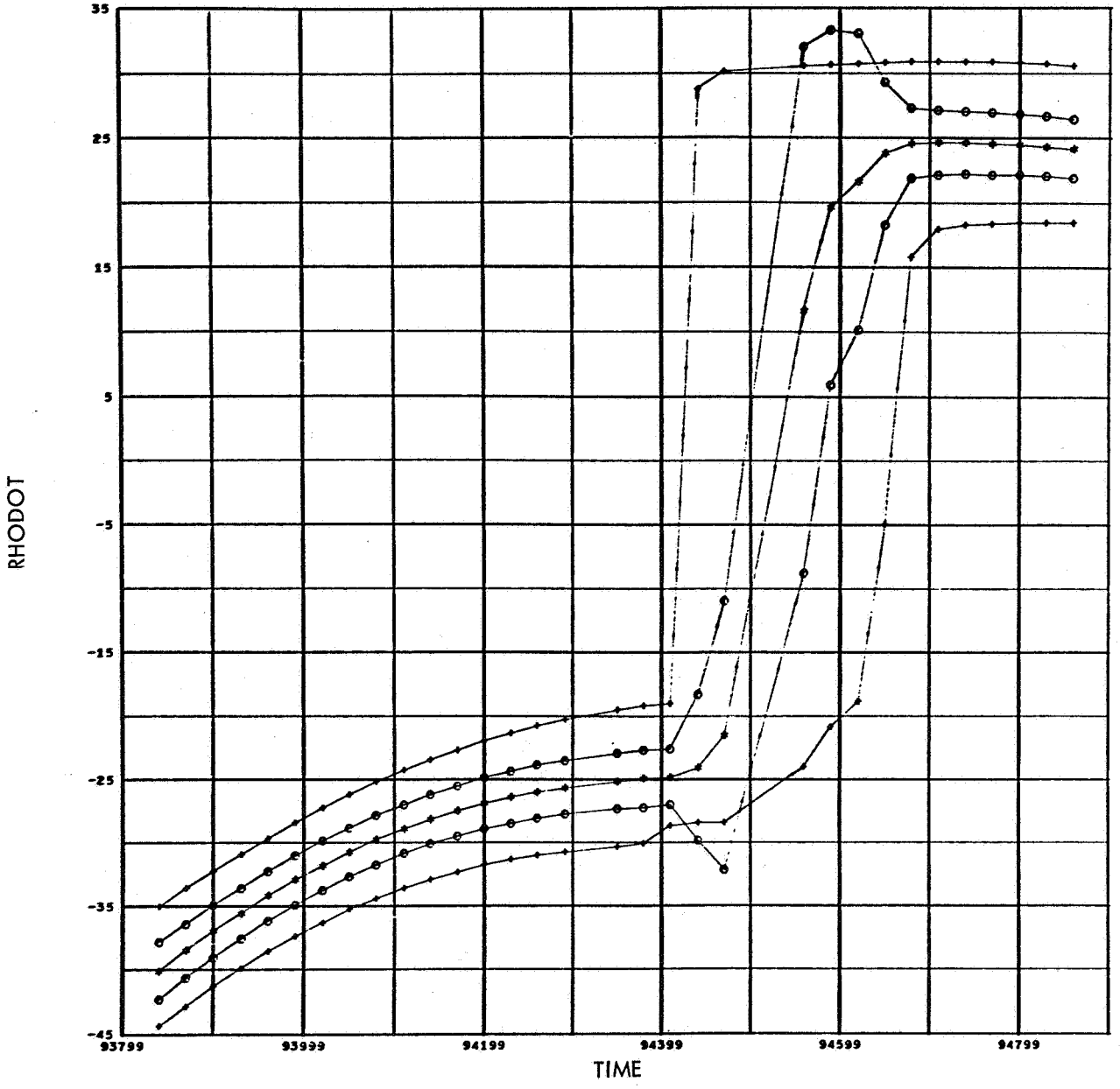

Figure 27. Relative Range Rate with 9 Marks Angle Tracking and Diagonal Weighting Matrix from MCC to TPF

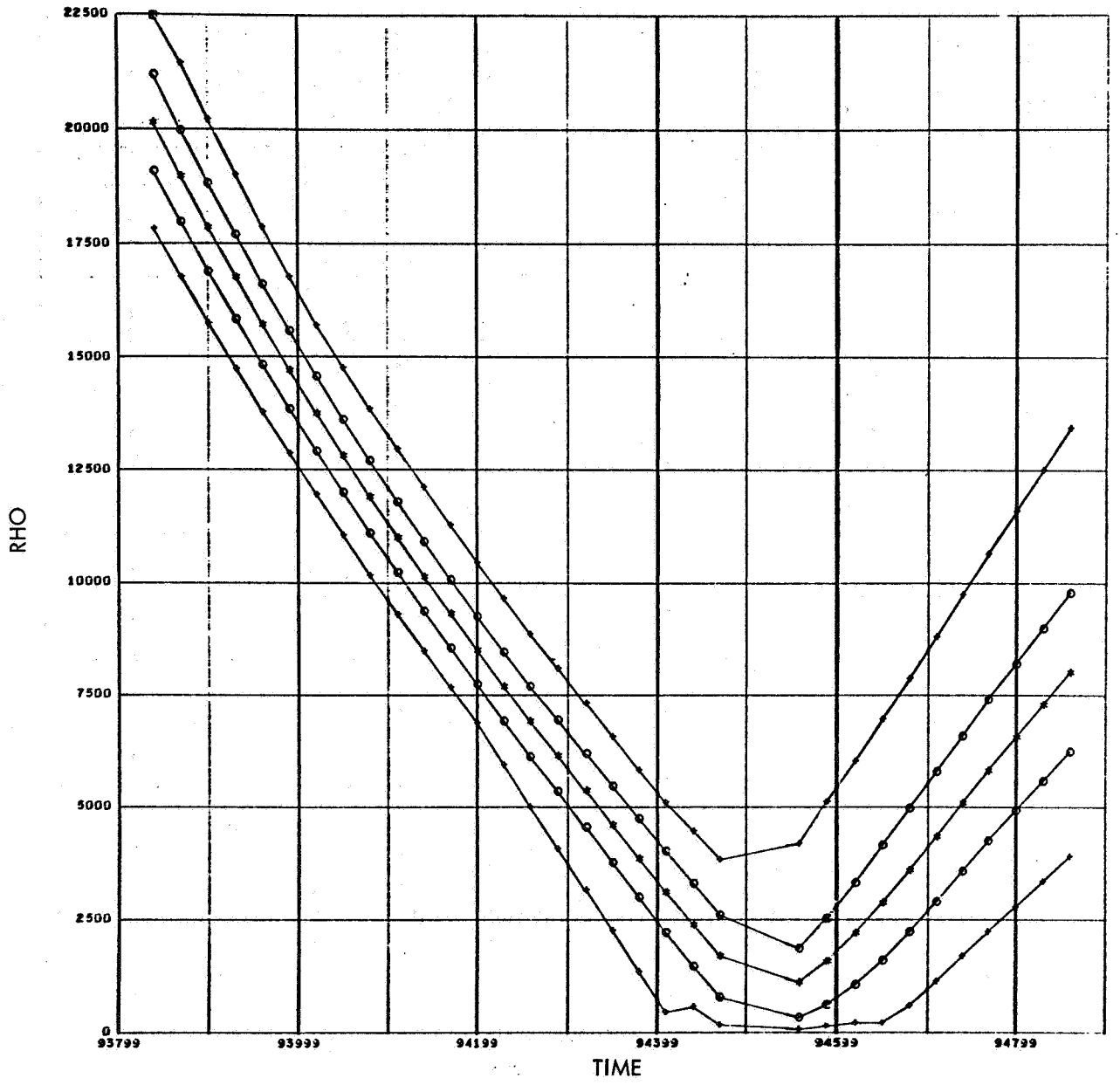

Figure 28. Relative Range with 9 Marks Angle Tracking and Diagonal Weighting Matrix from MCC to TPF

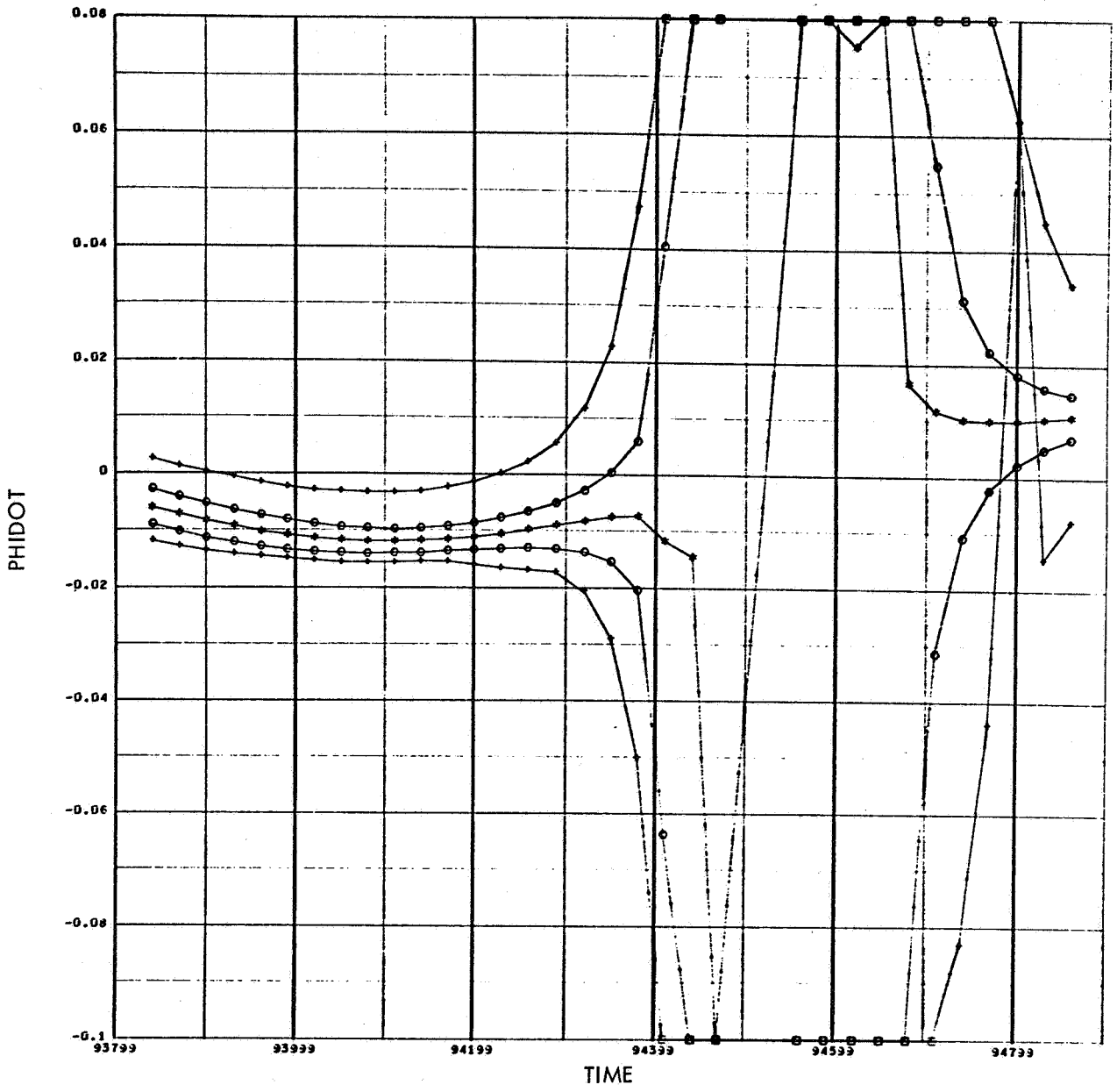

Figure 29. Inertial Inplane Line-of-sight Rate with 9 Marks Angle Tracking and Diagonal Weighting Matrix from MCC to TPF

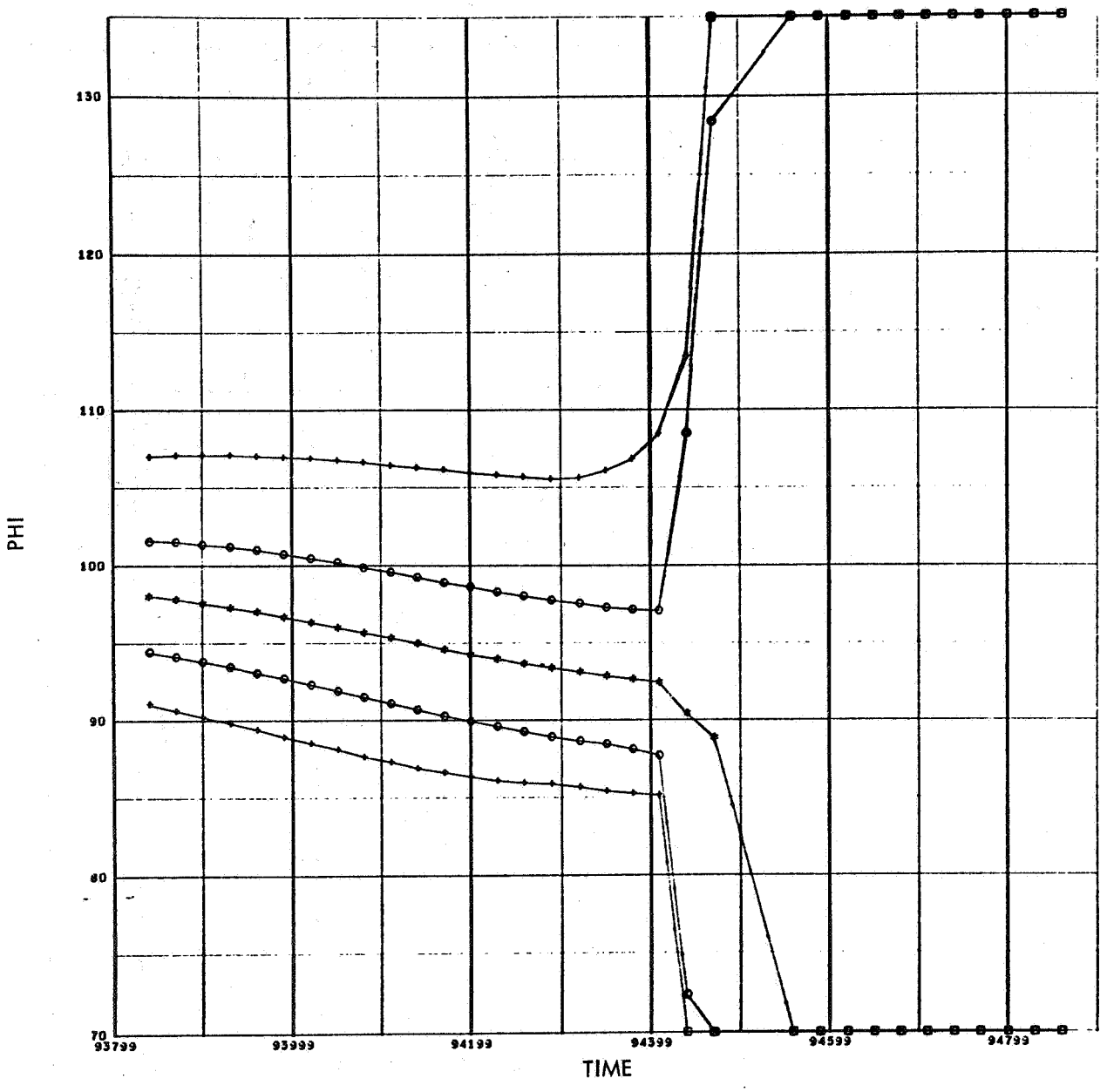

Figure 30. Inertial Inplane Angle with 9 Marks Angle Tracking and Diagonal Weighting Matrix from MCC to TPF

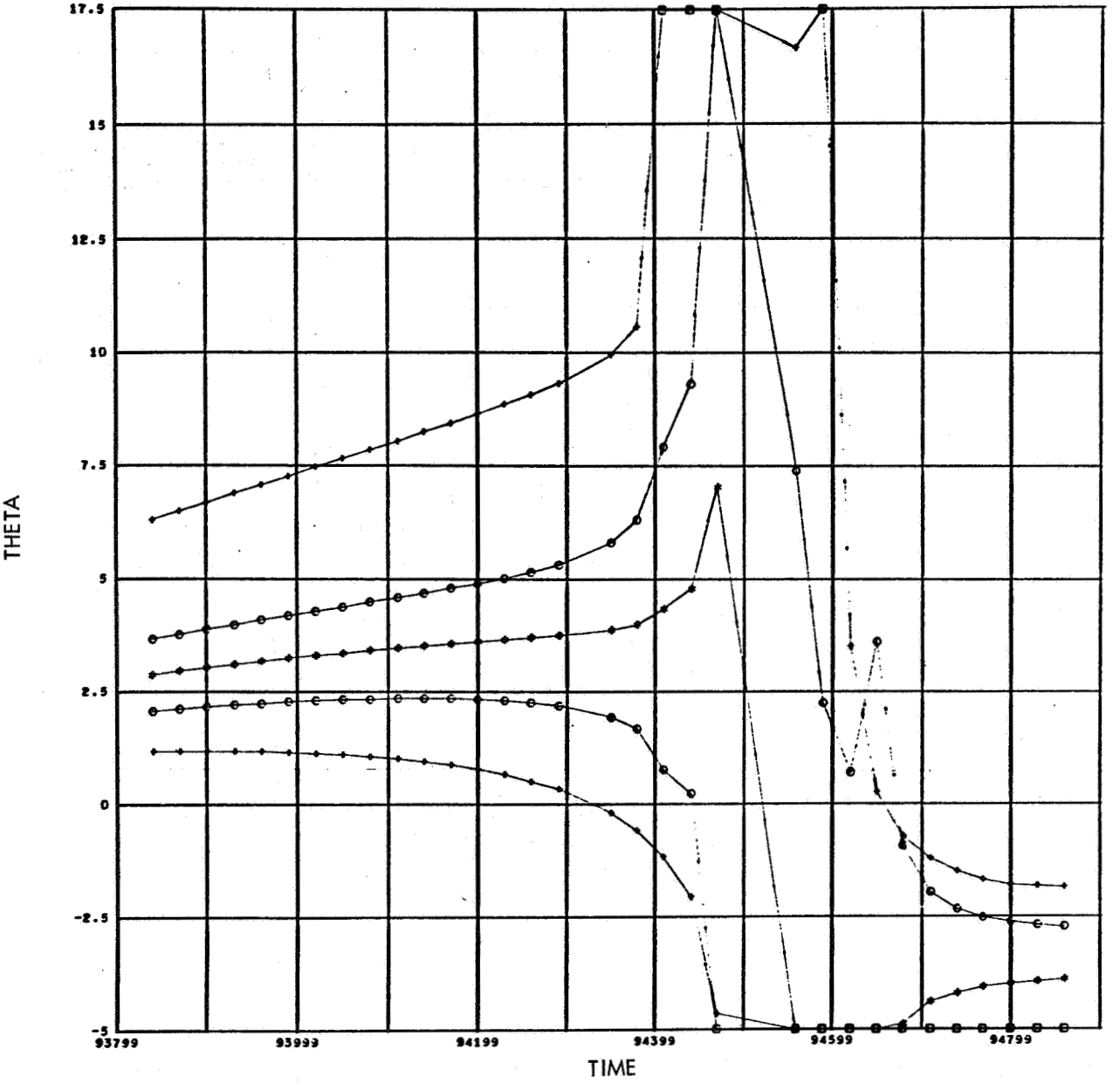

Figure 31. Out-of-plane Angle with 9 Marks Angle Tracking and Diagonal Weighting Matrix from MCC to TPF

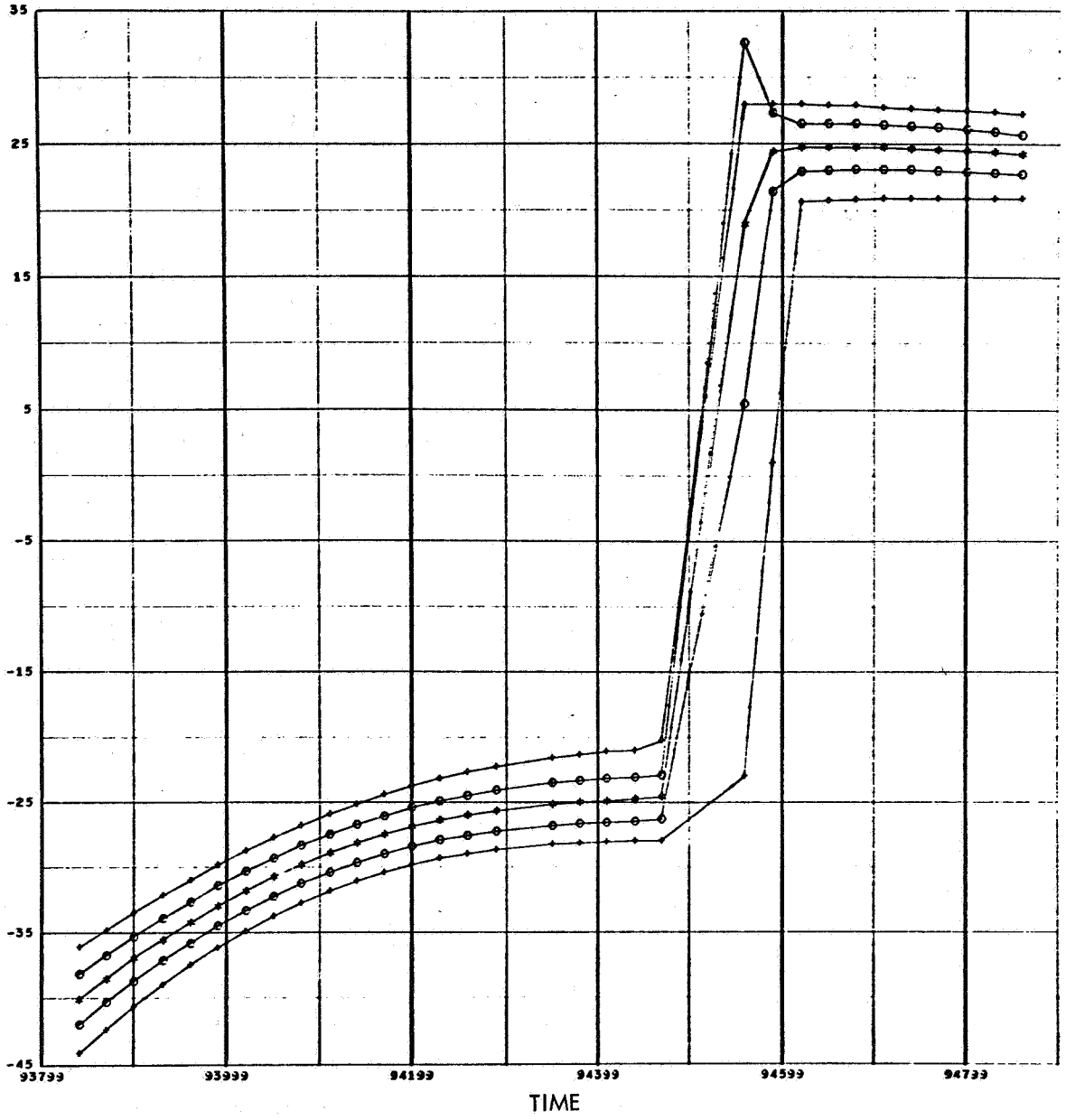

Figure 32. Relative Range Rate with 12 Marks Angle Tracking and Diagonal Weighting Matrix from MCC to TPF

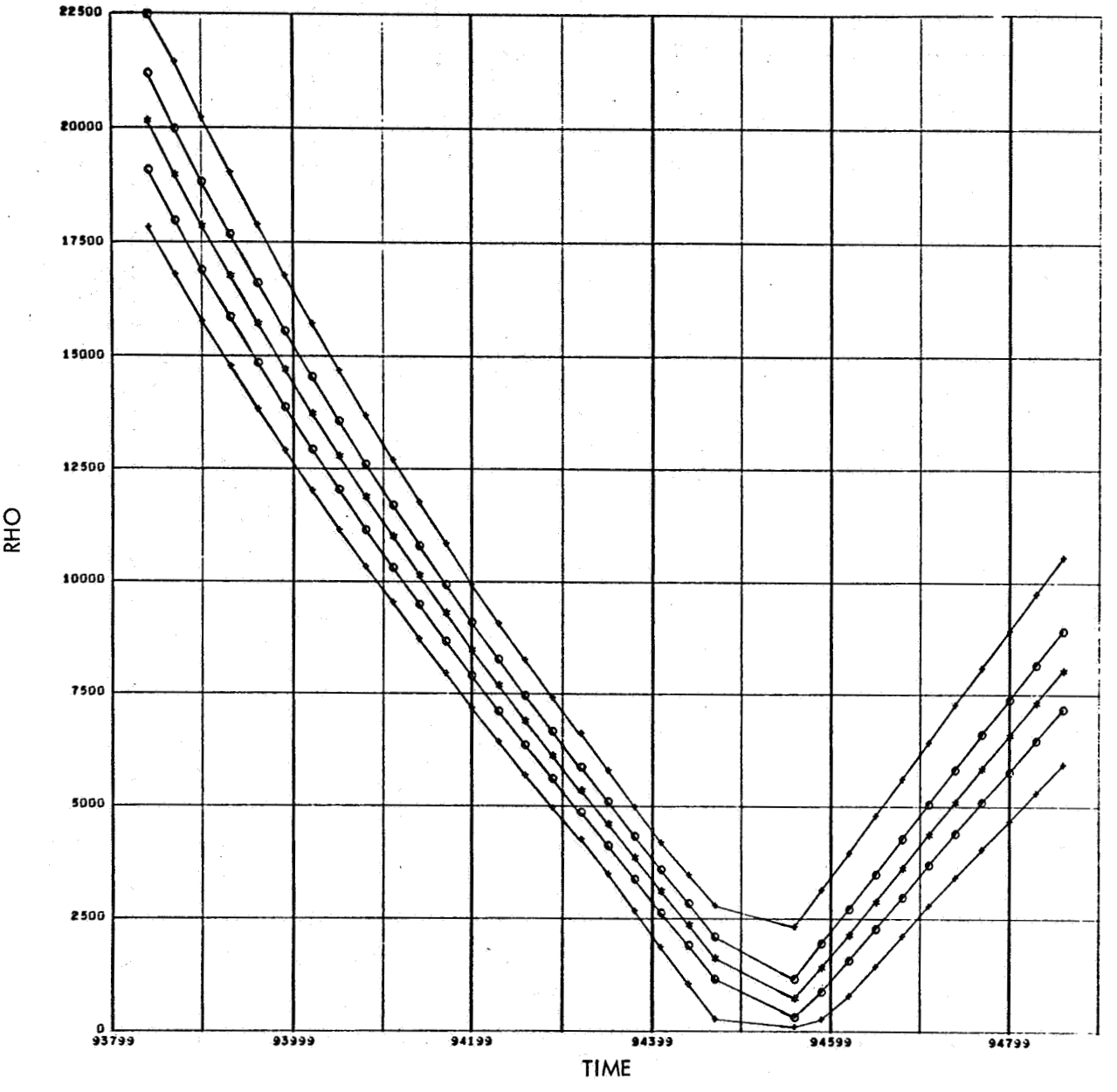

Figure 33. Relative Range with 12 Marks Angle Tracking and Diagonal Weighting Matrix from MCC to TPF

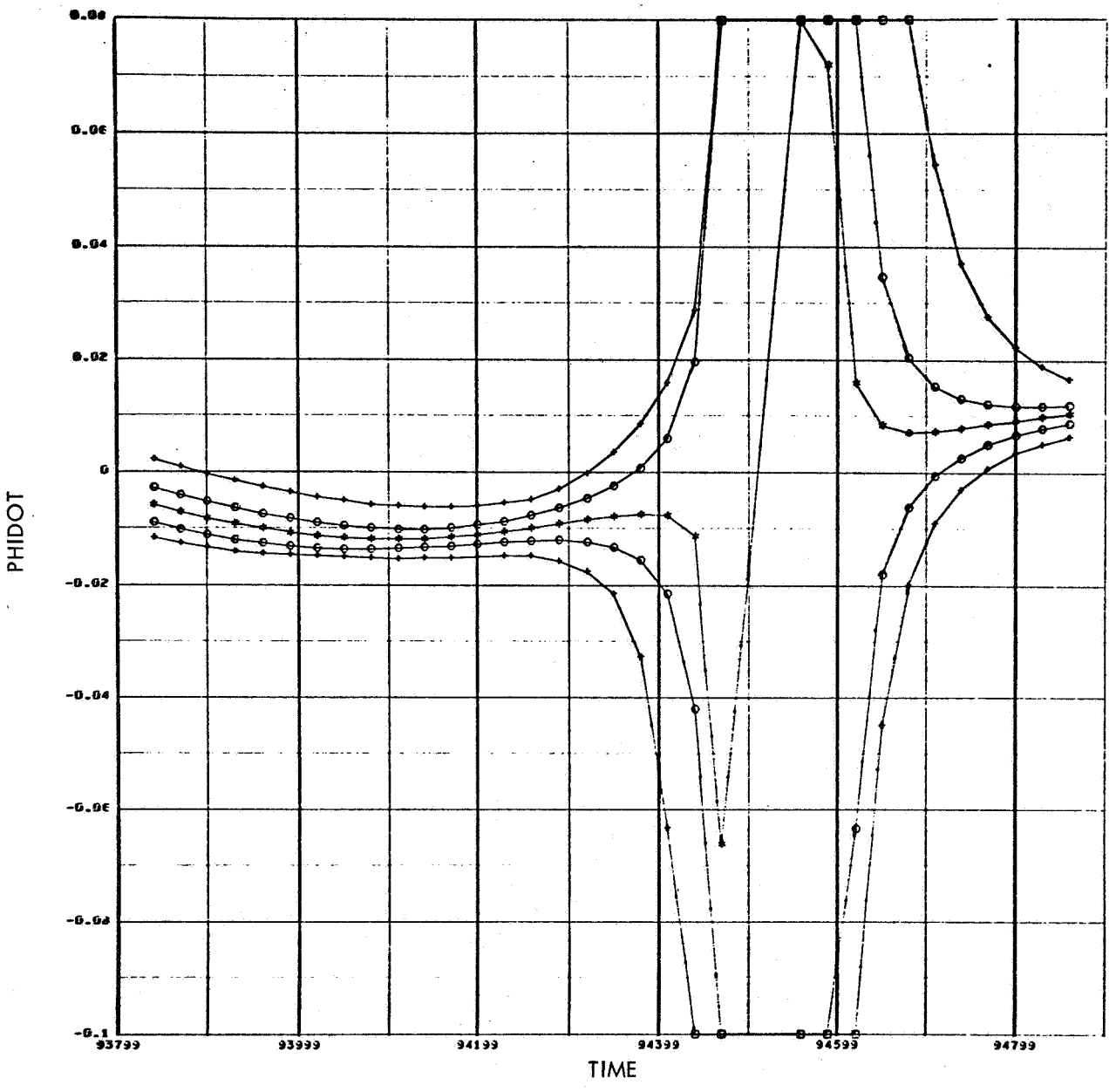

Figure 34. Inertial Inplane Line-of-sight Rate with 12 Marks Angle Tracking and Diagonal Weighting Matrix from MCC to TPF

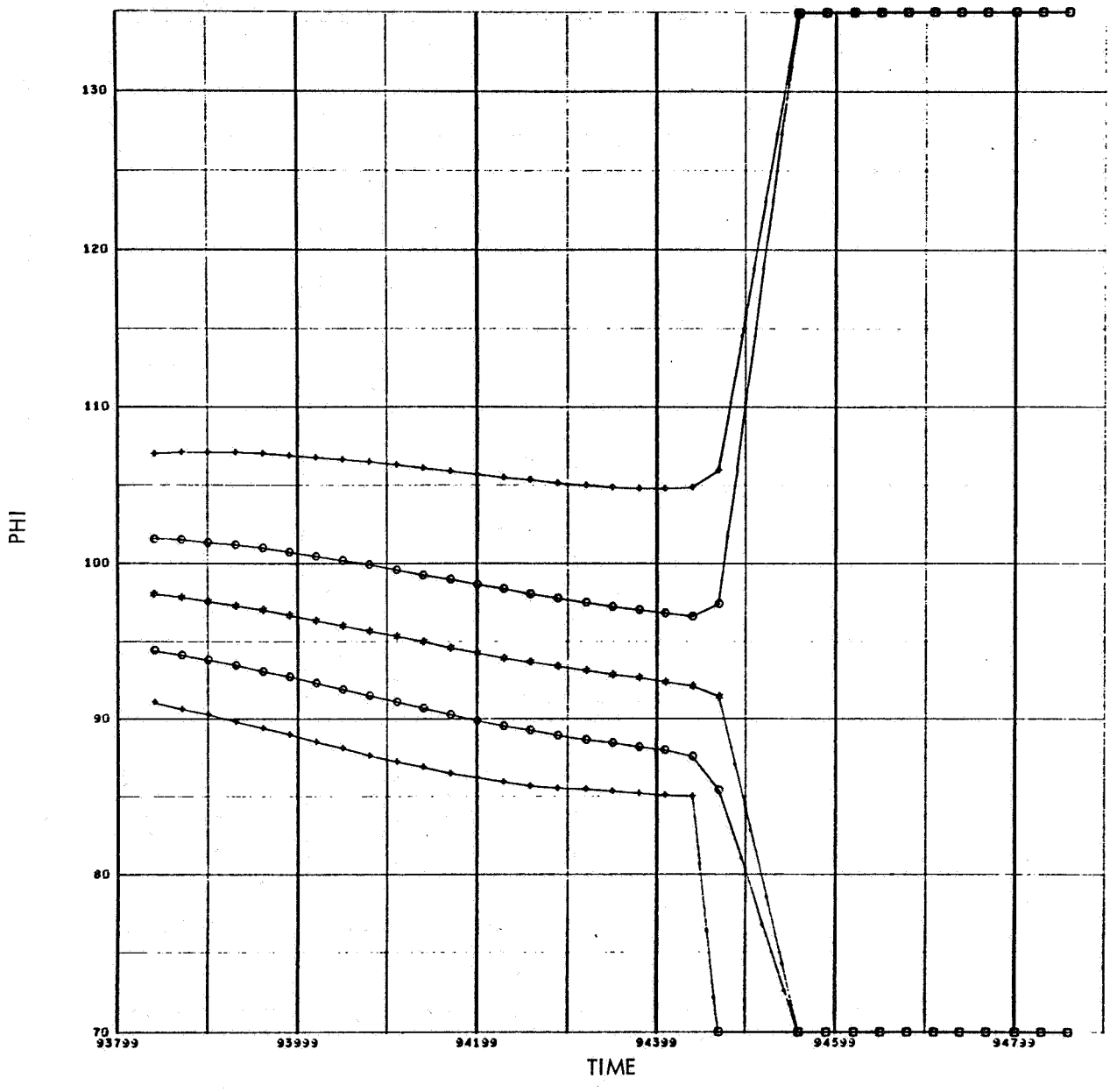

Figure 35. Inertial Inplane Angle with 12 Marks Angle Tracking and Diagonal Weighting Matrix from MCC to TPF

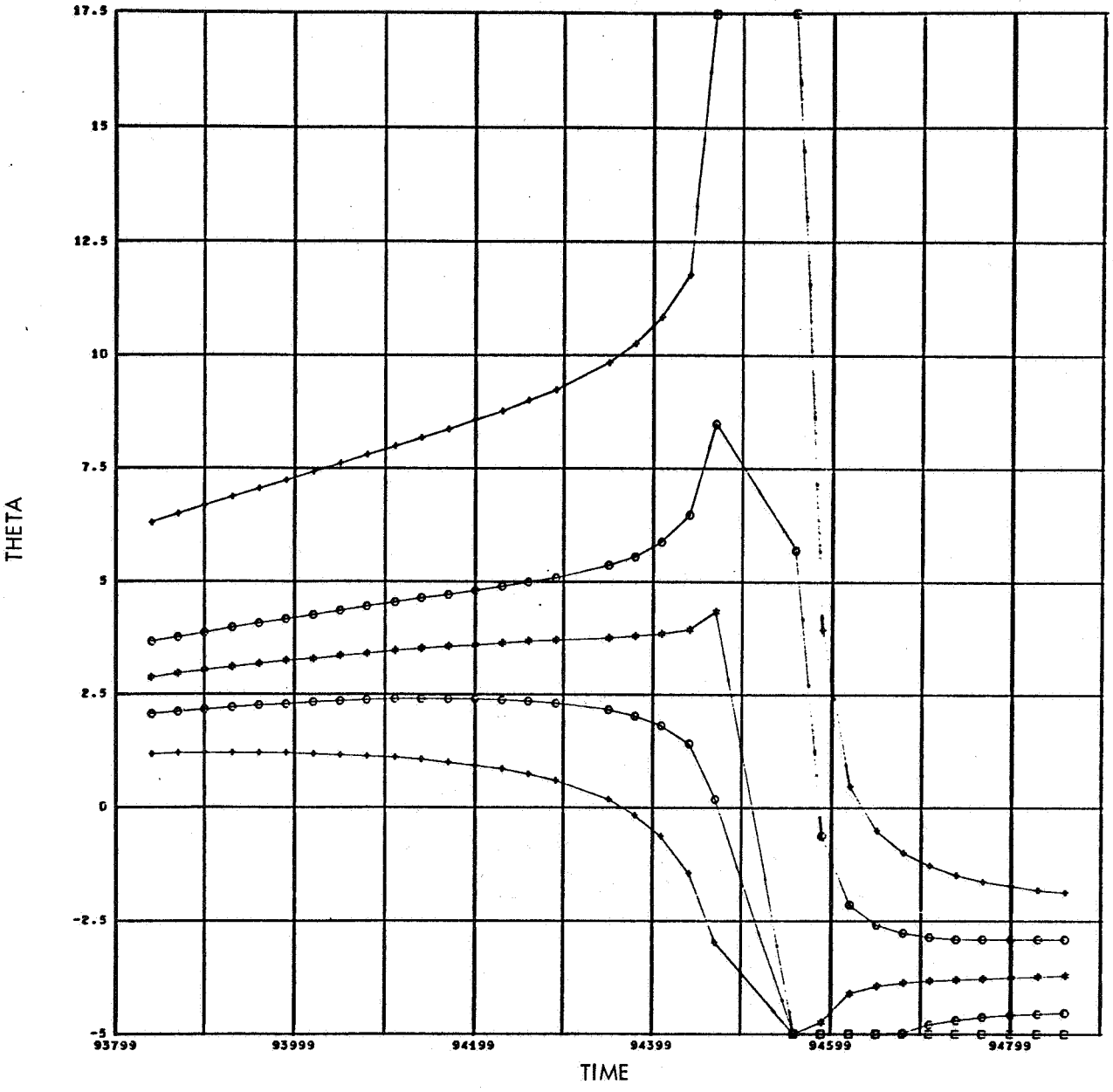

Figure 36. Out-of-plane Angle with 12 Marks Angle Tracking and Diagonal Weighting Matrix from MCC to TPF

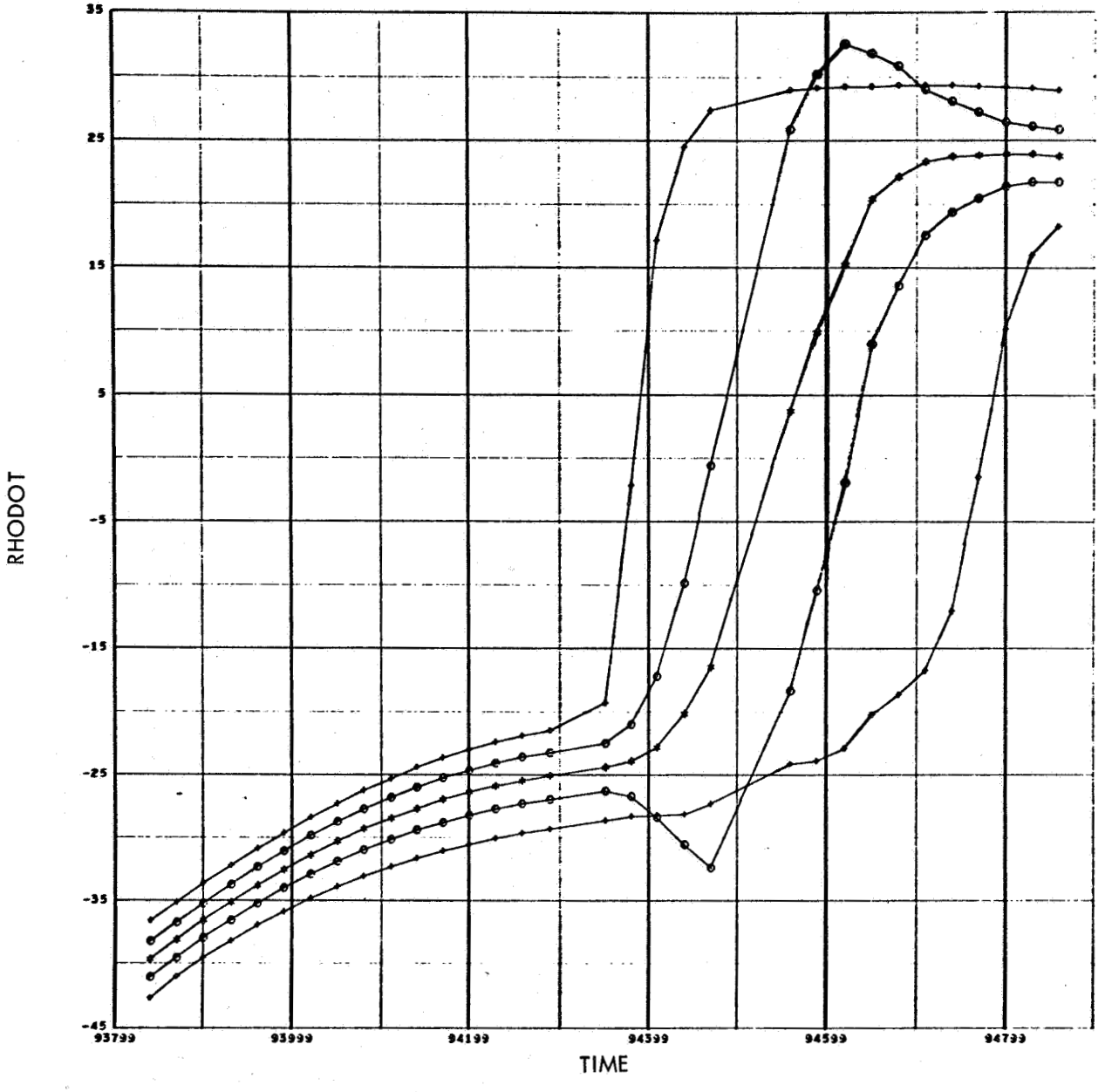

Figure 37. Relative Range Rate with 3 Marks Angle Tracking and Nondiagonal Weighting Matrix from MCC to TPF

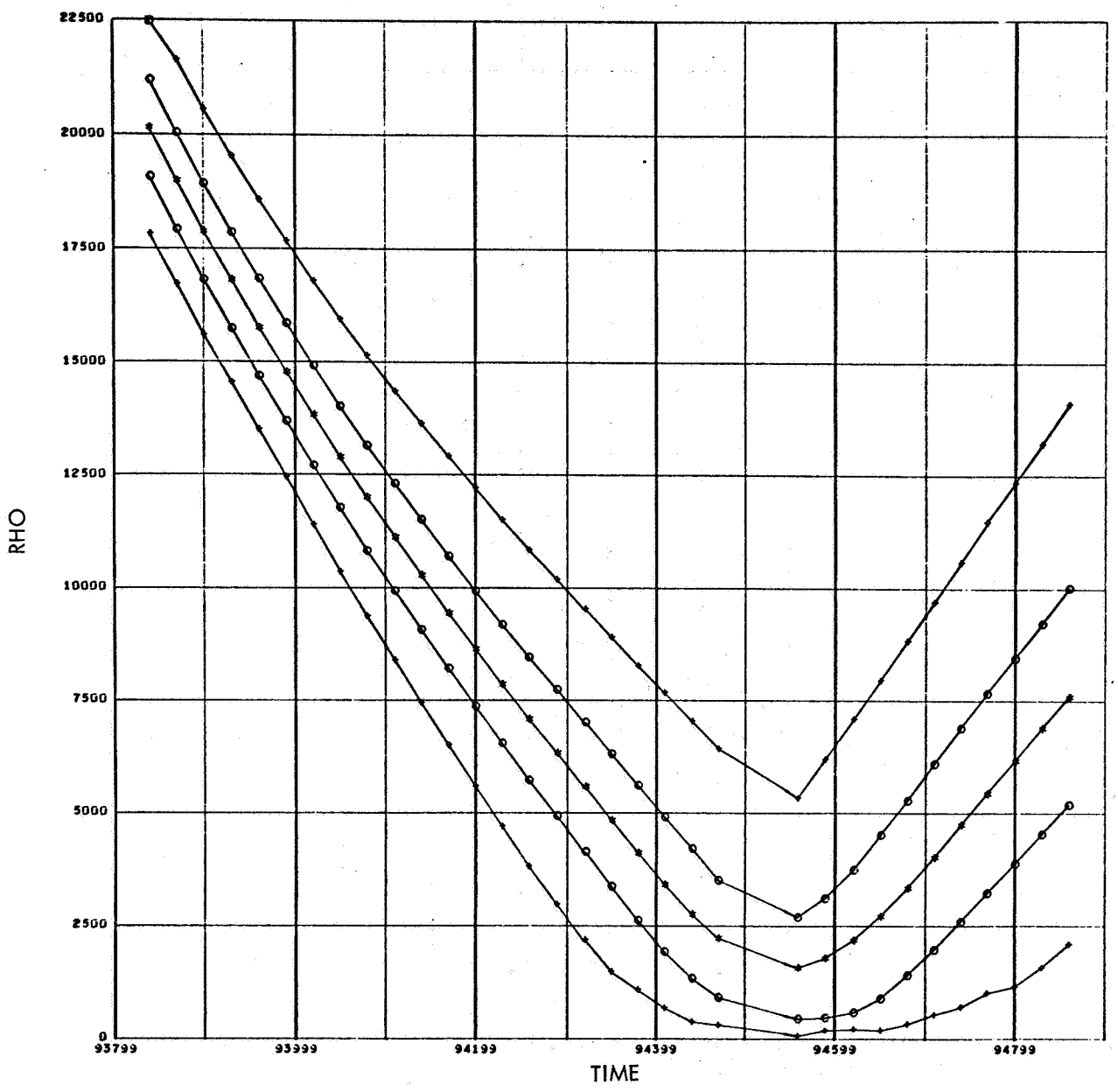

Figure 38. Relative Range with 3 Marks Angle Tracking and Nondiagonal Weighting Matrix from MCC to TPF

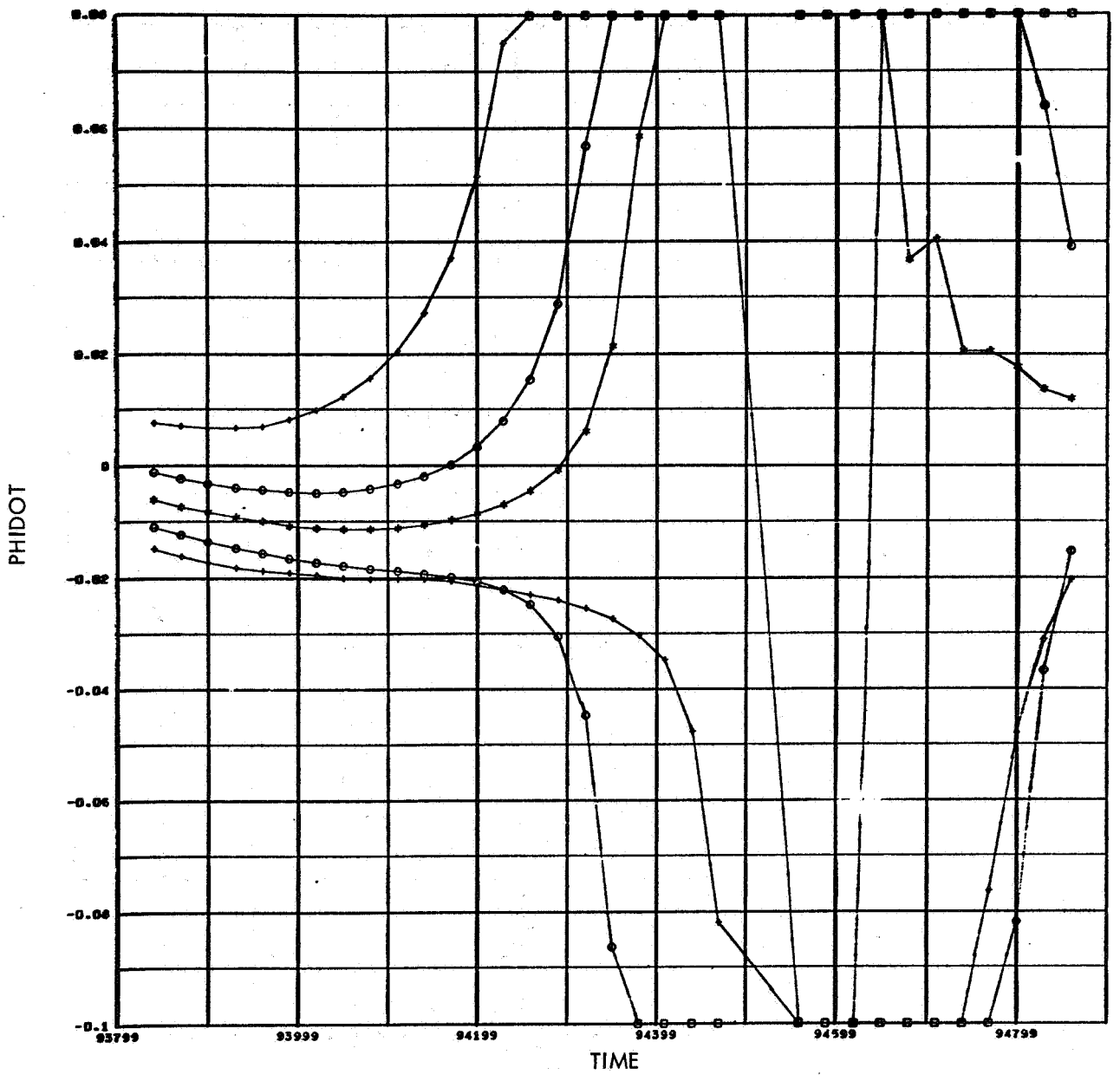

Figure 39. Inertial Inplane Line-of-sight Rate with 3 Marks Angle Tracking and Nondiagonal Weighting Matrix from MCC to TPF

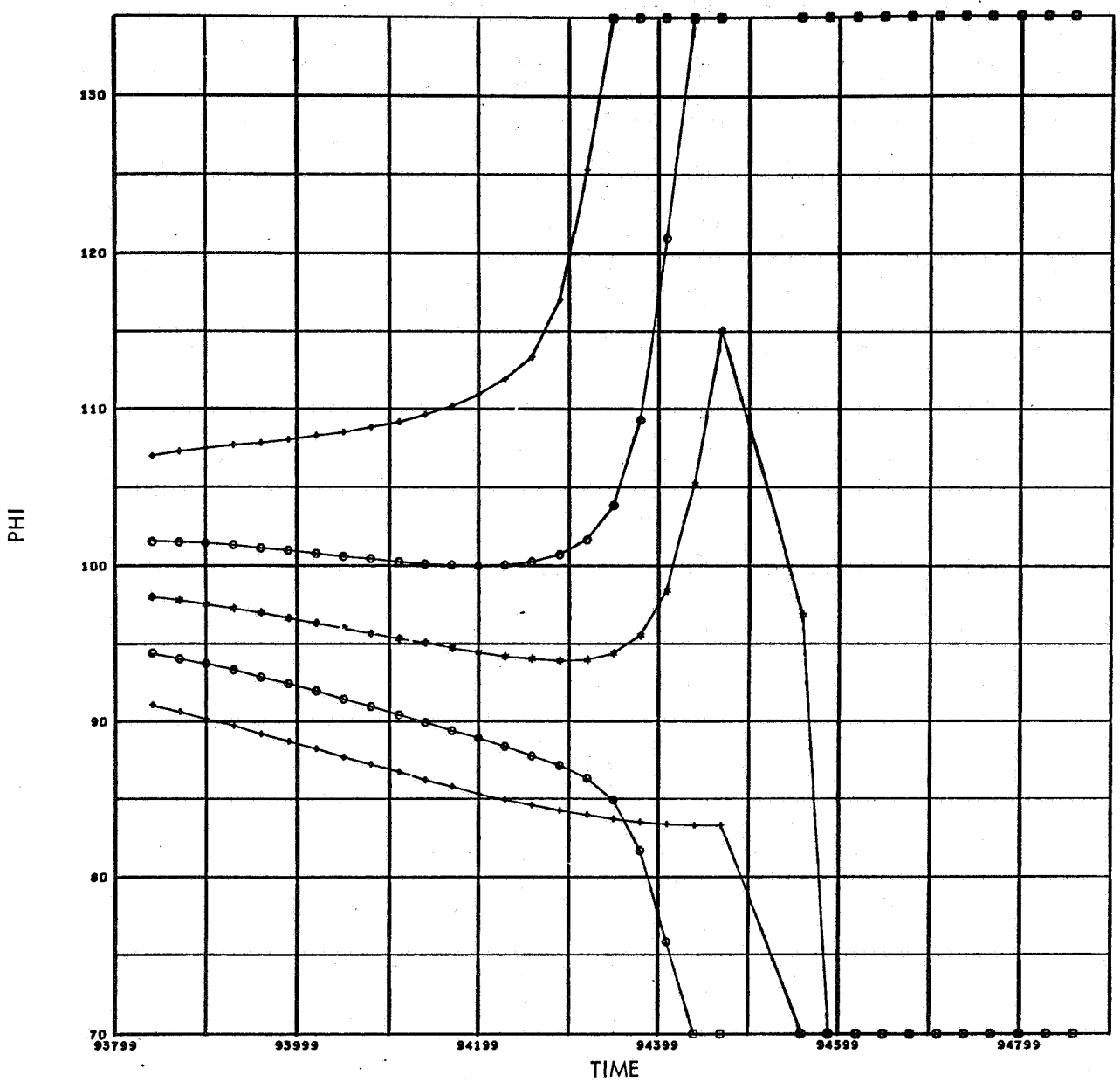

Figure 40. Inertial Inplane Angle with 3 Marks Angle Tracking and Nondiagonal Weighting Matrix from MCC to TPF

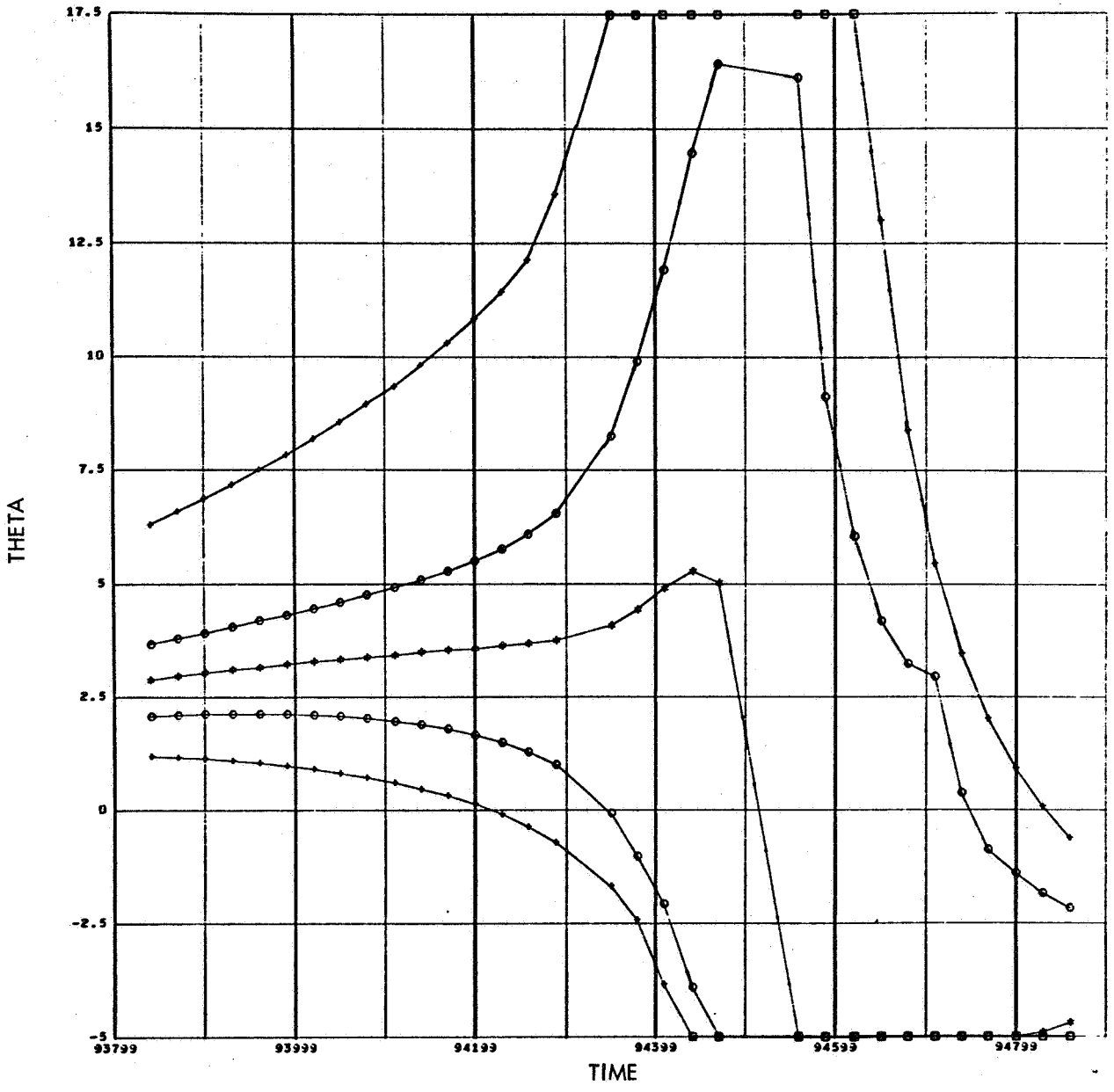

Figure 41. Out-of-plane Angle with 3 Marks Angle Tracking and Nondiagonal Weighting Matrix from MCC to TPF

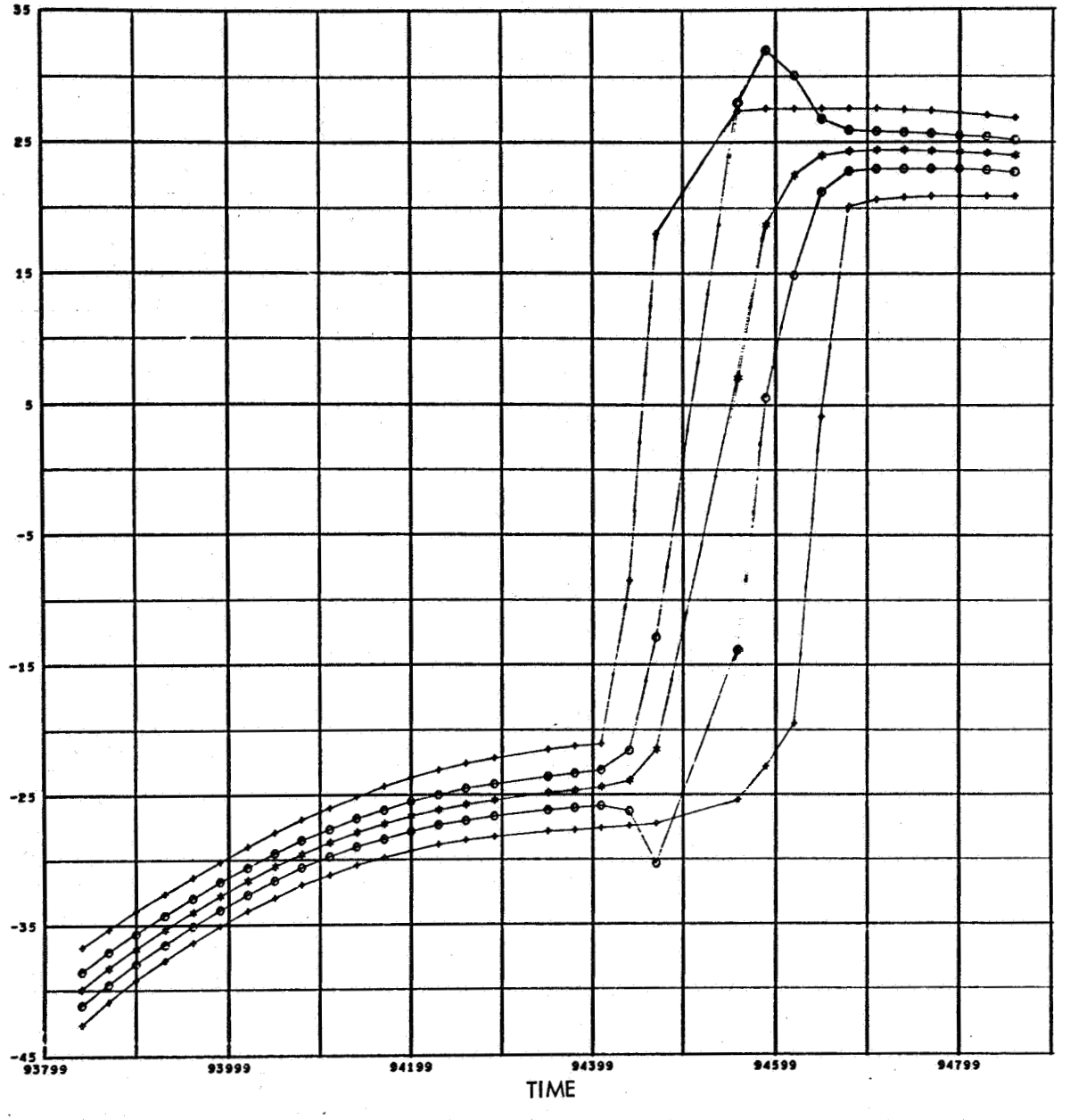

Figure 42. Relative Range Rate with 6 Marks Angle Tracking and Nondiagonal Weighting Matrix from MCC to TPF

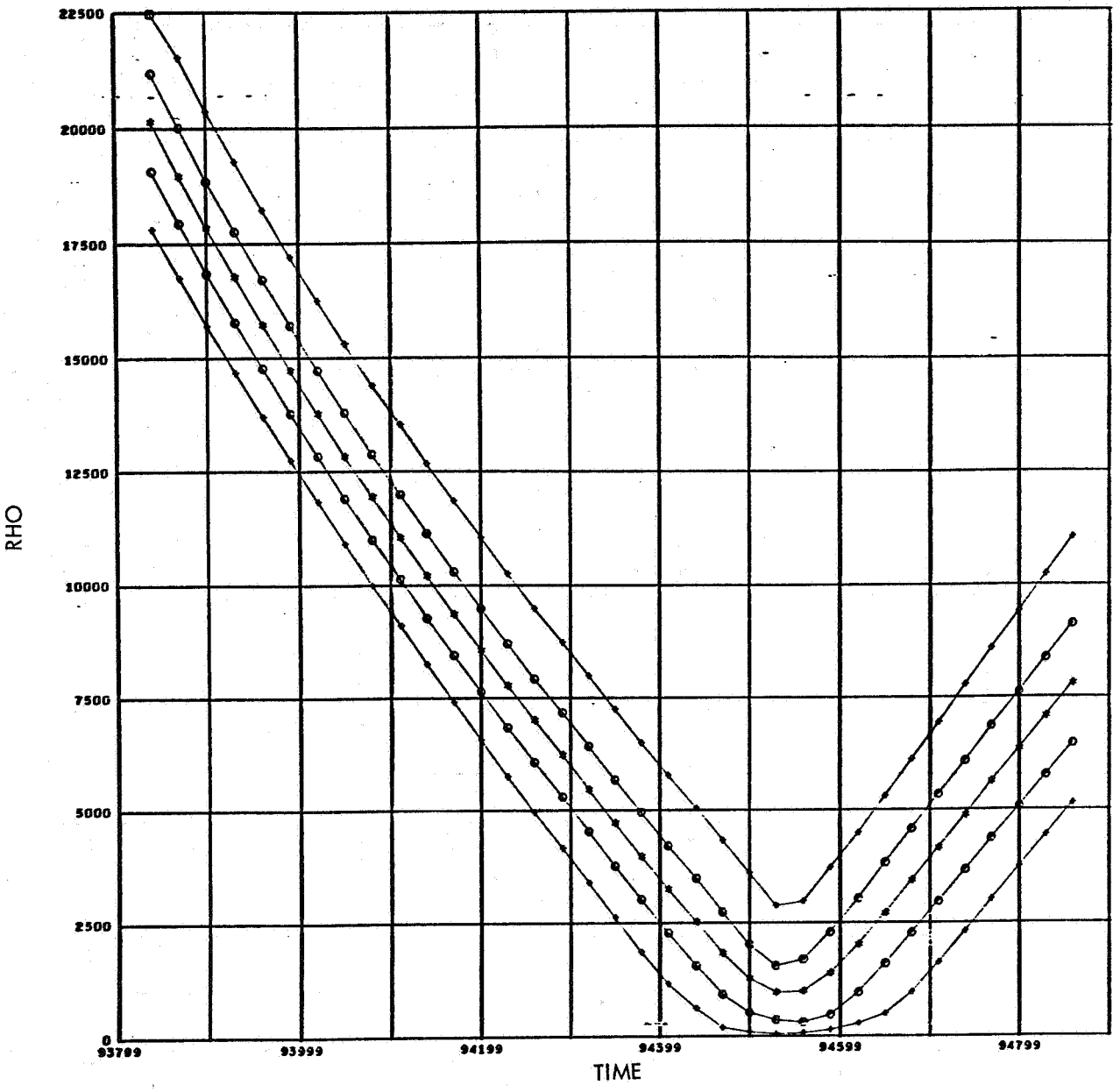

Figure 43. Relative Range with 6 Marks Angle Tracking and Nondiagonal Weighting Matrix from MCC to TPF

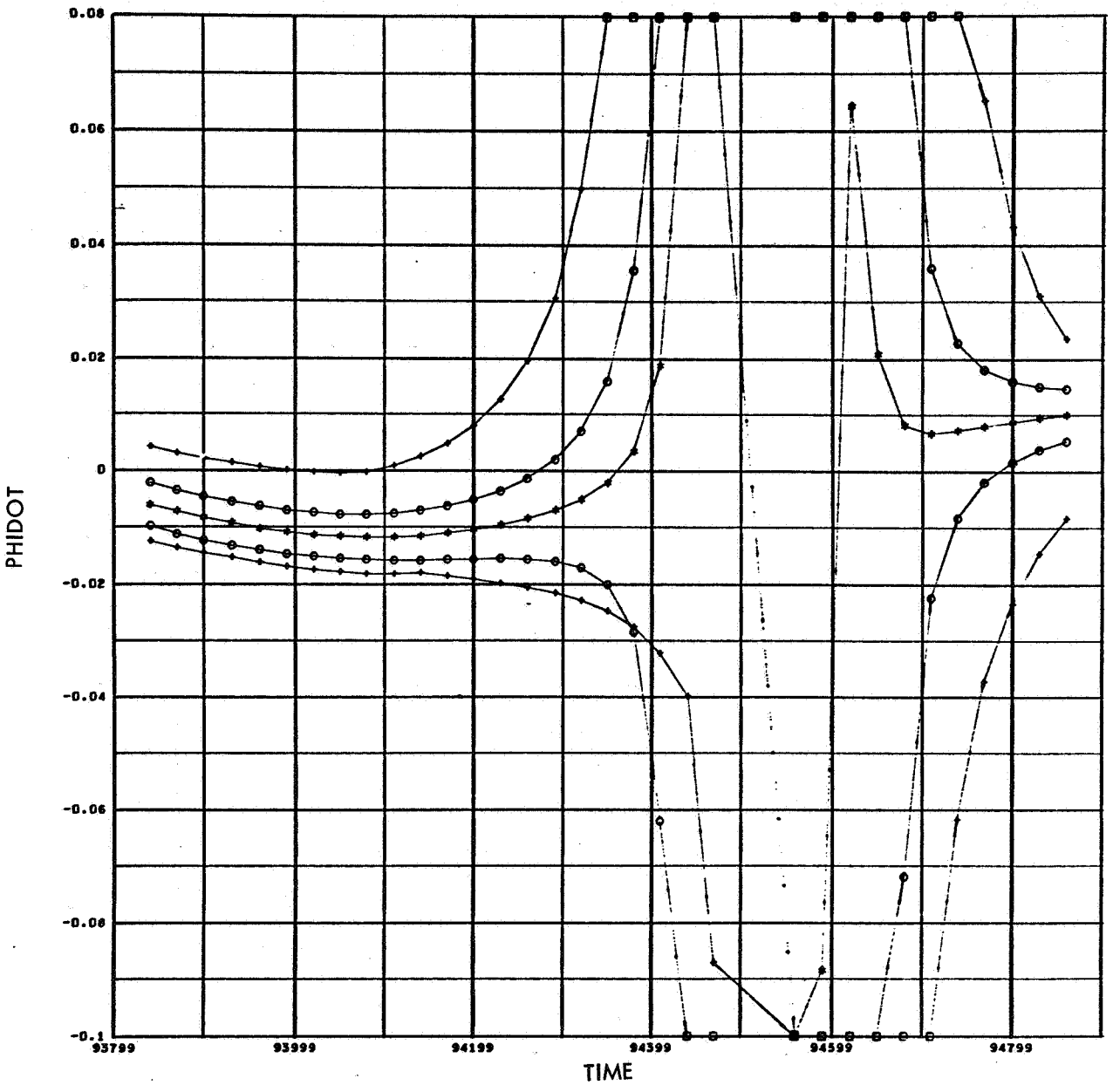

Figure 44. Inertial Inplane Line-of-sight Rate with 6 Marks Angle Tracking and Nondiagonal Weighting Matrix from MCC to TPF

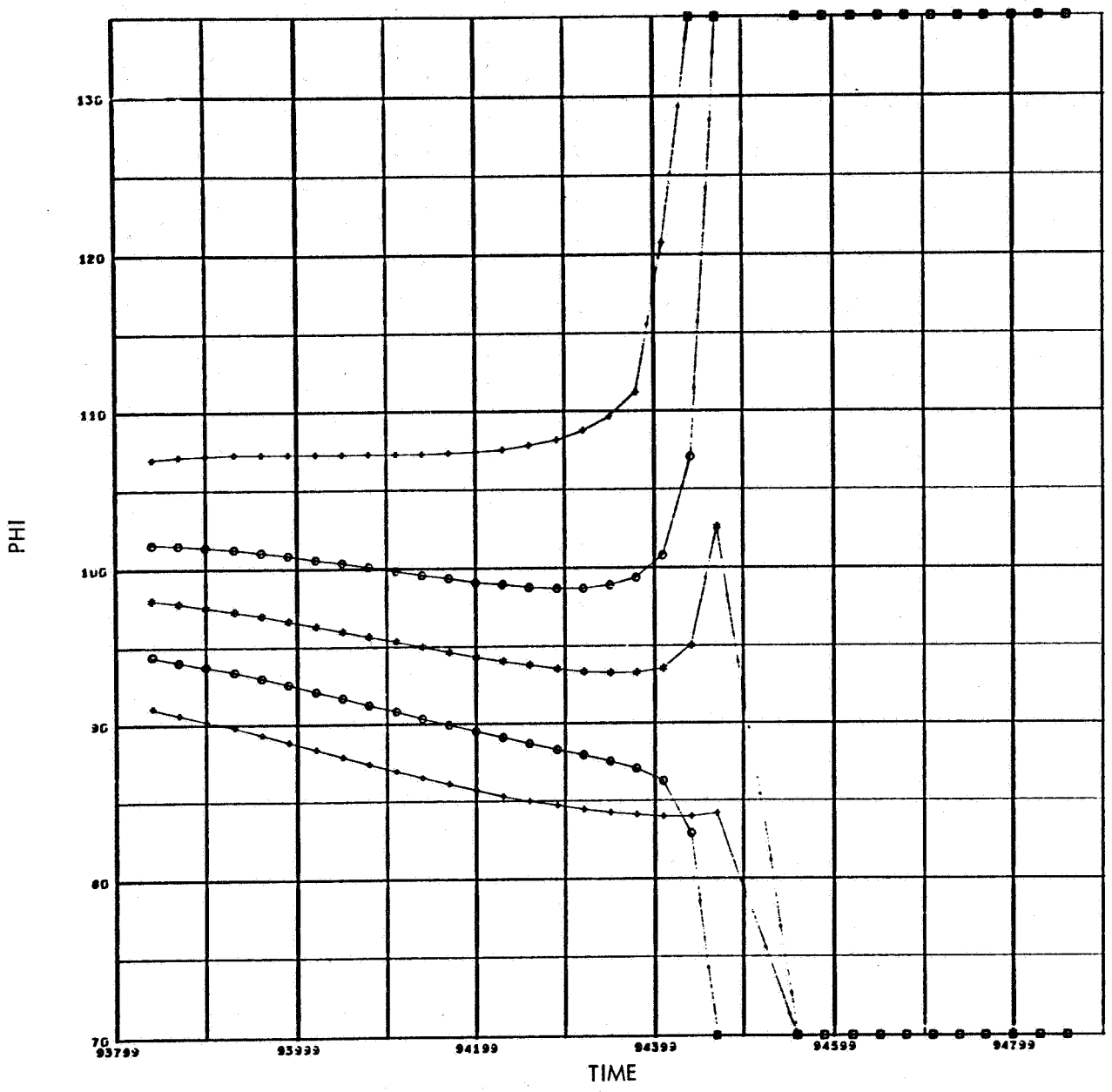

Figure 45. Inertial Inplane Angle With 6 Marks Angle Tracking and Nondiagonal Weighting Matrix from MCC to TPF

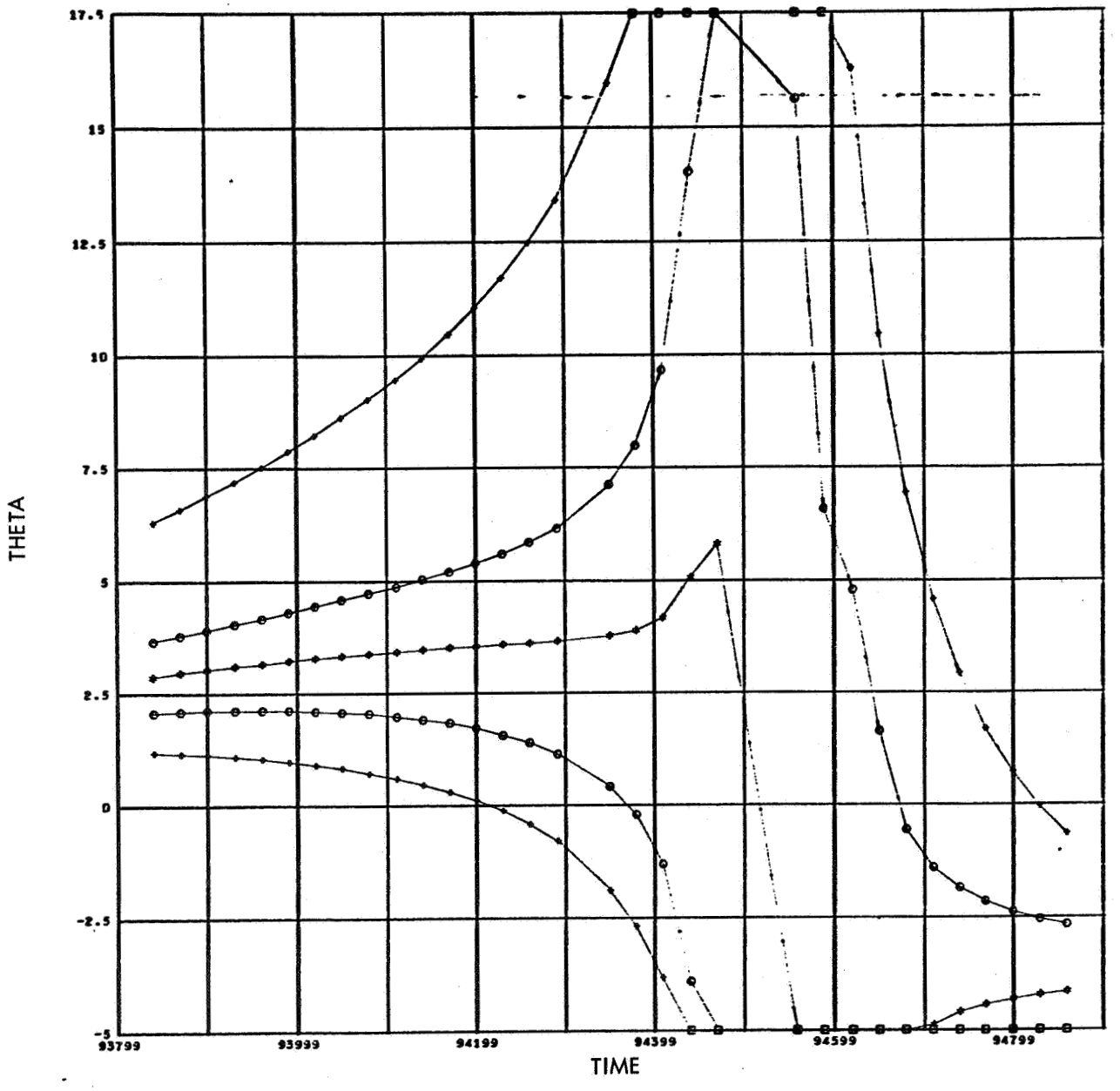

Figure 46. Out-of-plane Angle with 6 Marks Angle Tracking and Nondiagonal Weighting Matrix from MCC to TPF

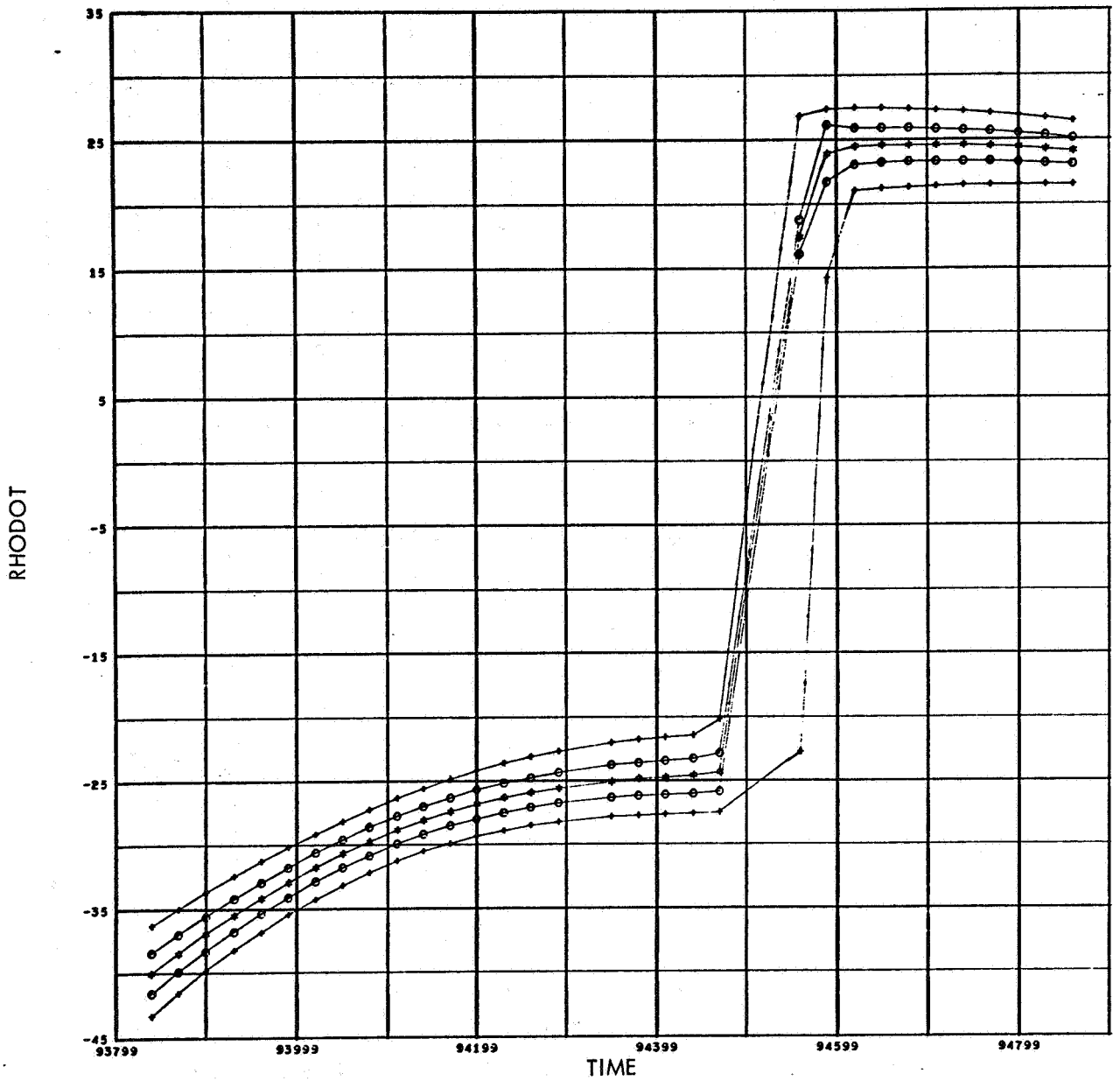

Figure 47. Relative Range Rate with 9 Marks Angle Tracking and Nondiagonal Weighting Matrix from MCC to TPF

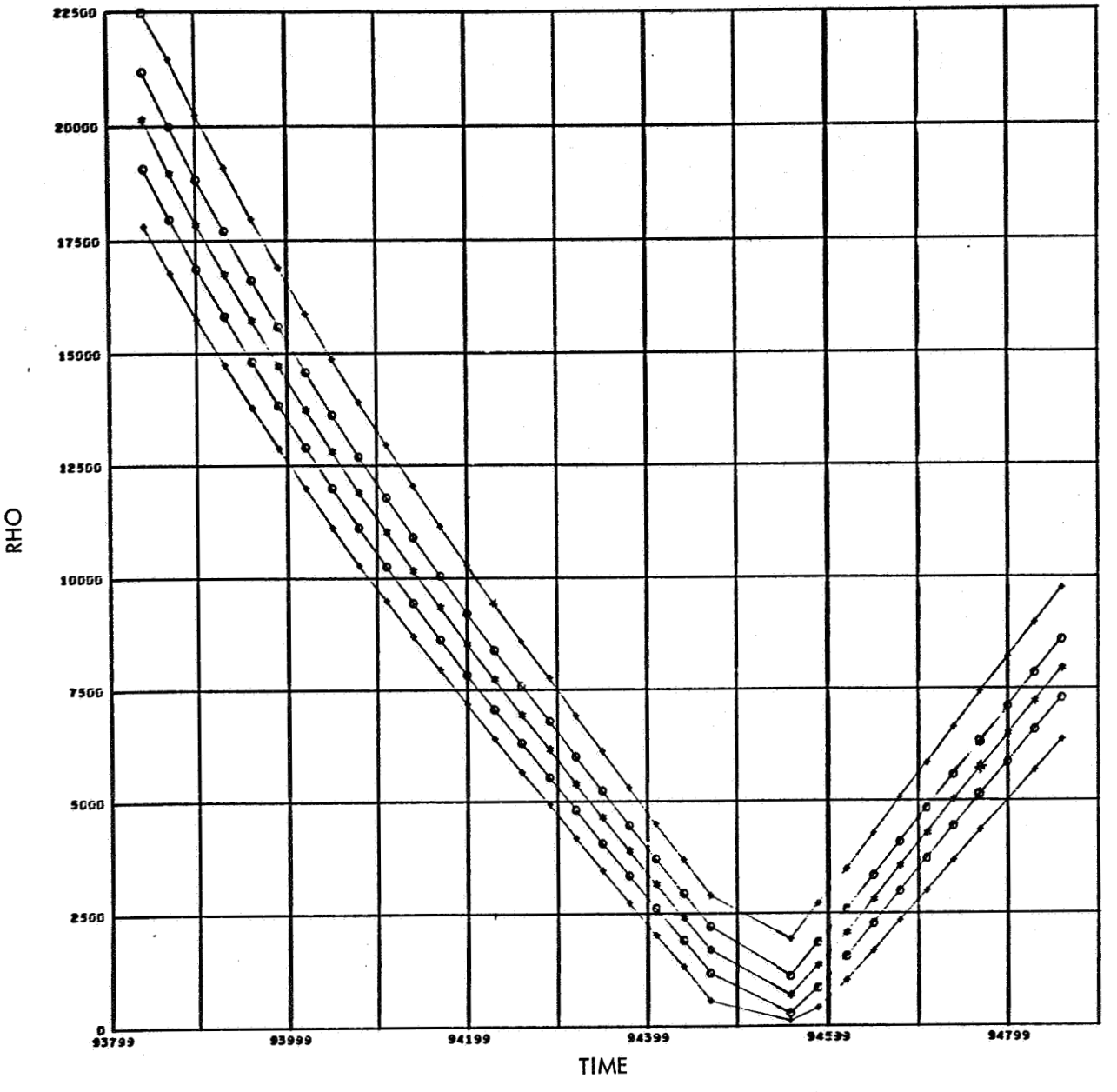

Figure 48. Relative Range with 9 Marks Angle Tracking and Nondiagonal Weighting Matrix from MCC to TPF

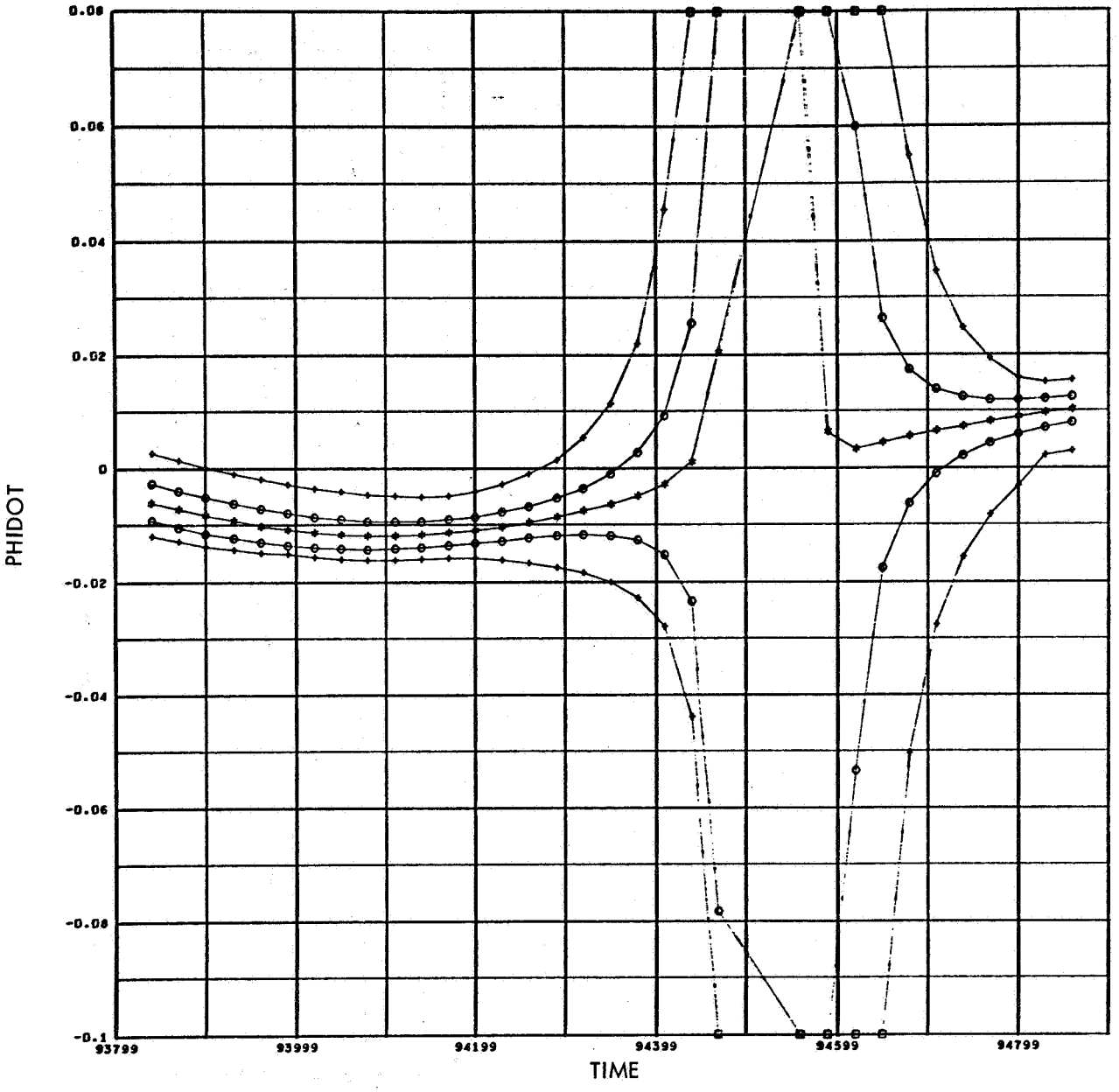

Figure 49. Inertial Inplane Line-of-sight Rate with 9 Marks Angle Tracking and Nondiagonal Weighting Matrix from MCC to TPF

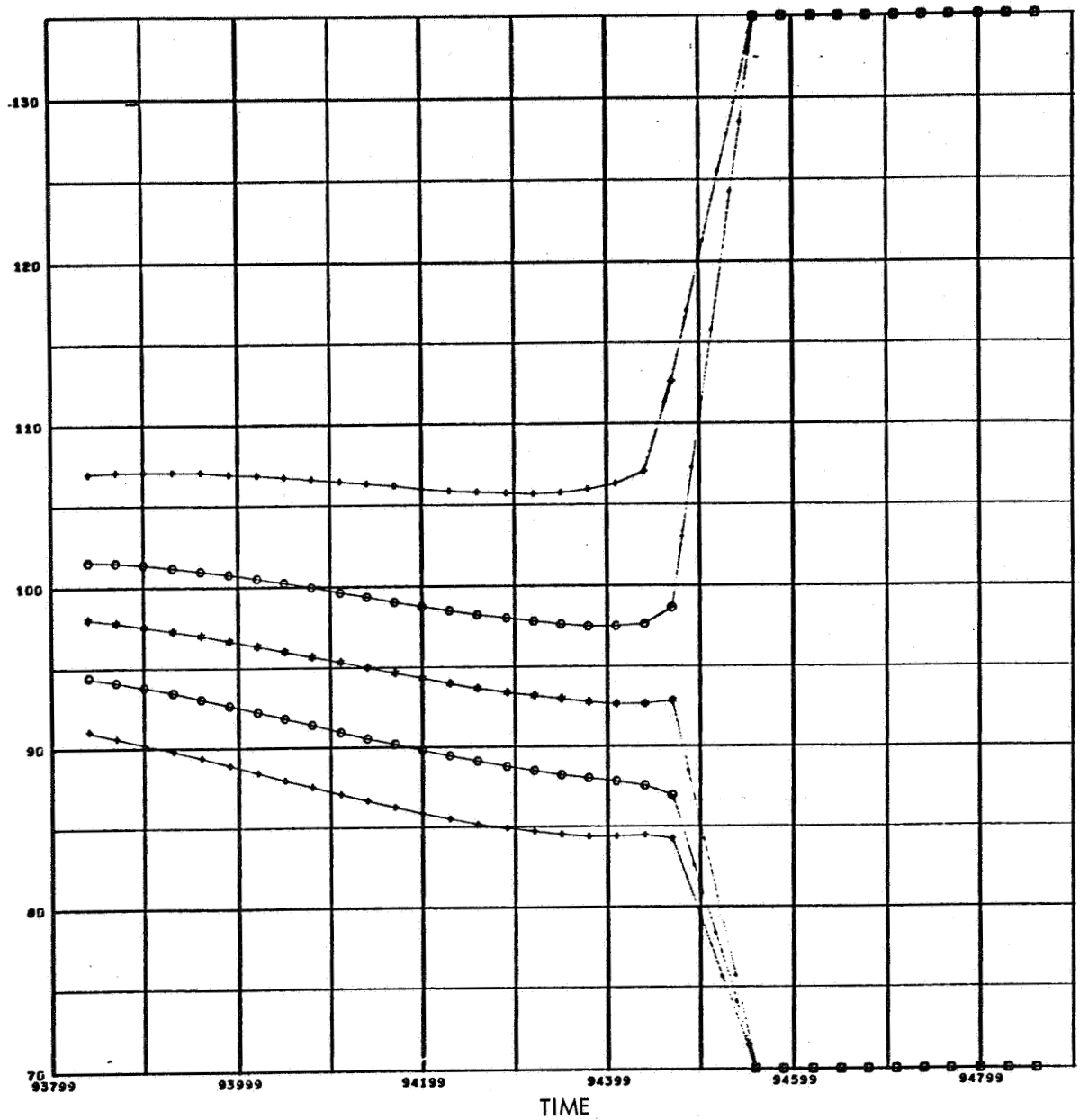

Figure 50. Inertial Inplane Angle with 9 Marks Angle Tracking and Nondiagonal Weighting Matrix from MCC to TPF

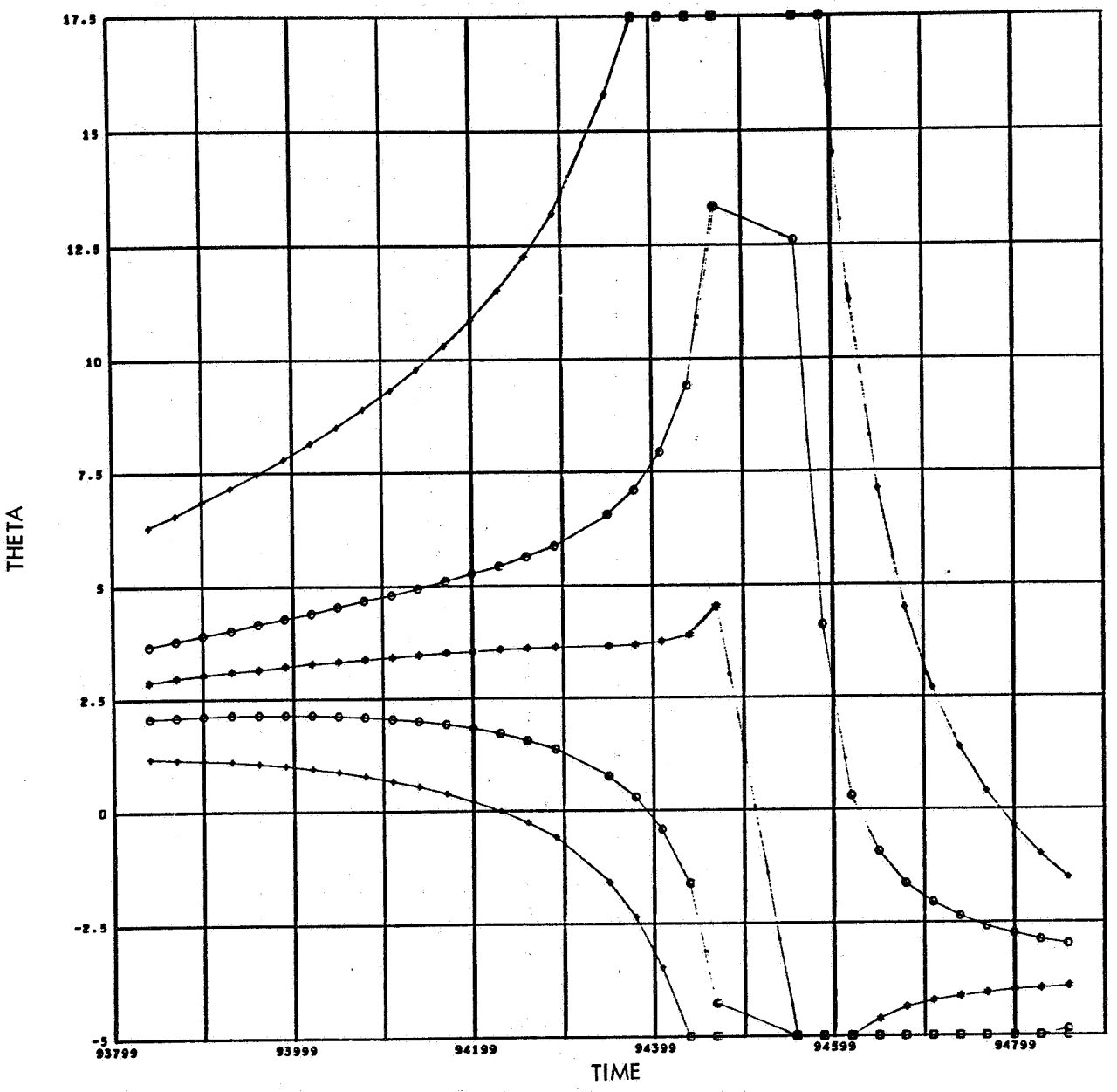

Figure 51. Out-of-plane Angle with 9 Marks Angle Tracking and Nondiagonal Weighting Matrix from MCC to TPF

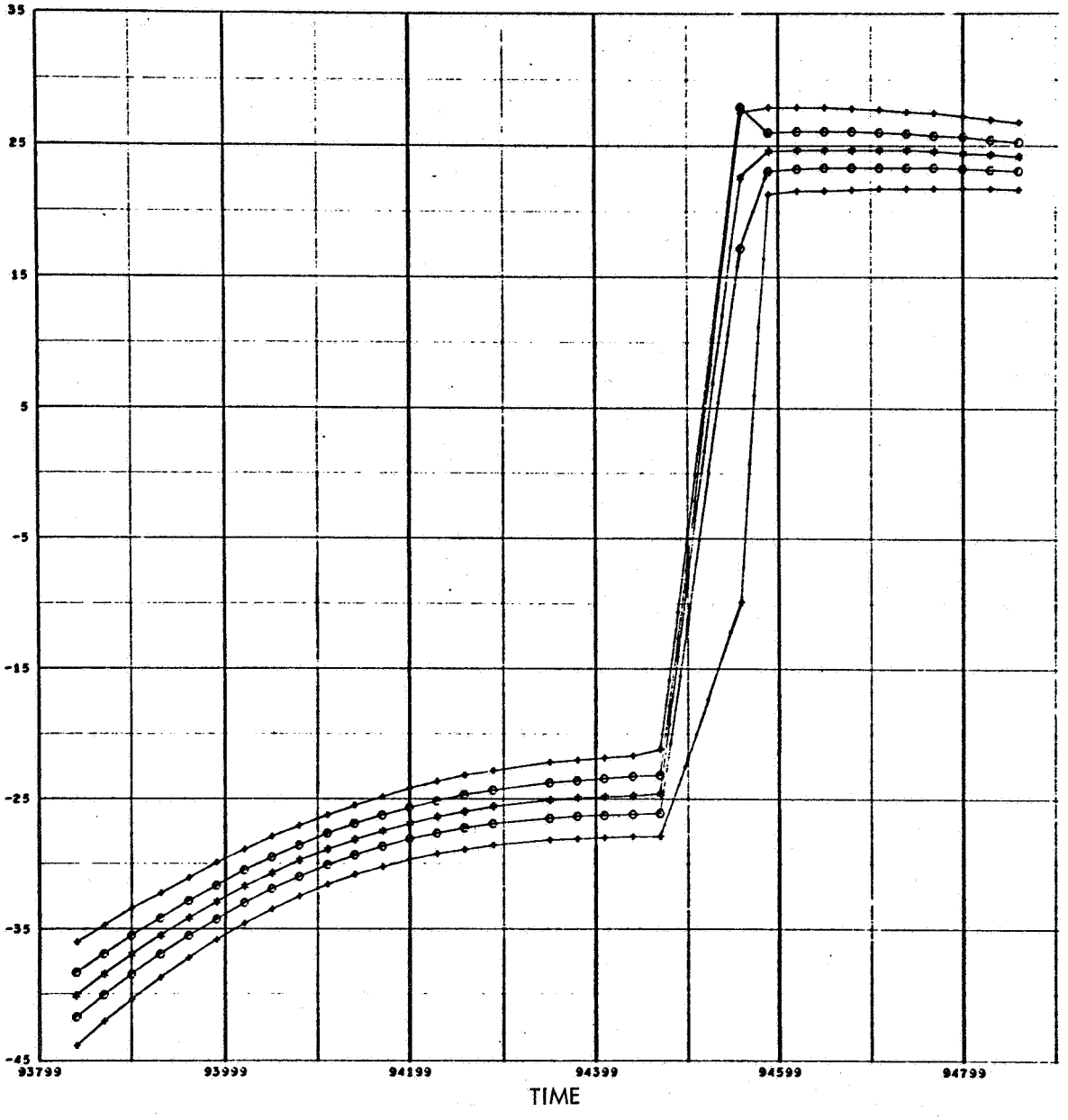

Figure 52. Relative Range Rate with 12 Marks Angle Tracking and Nondiagonal Weighting Matrix from MCC to TPF

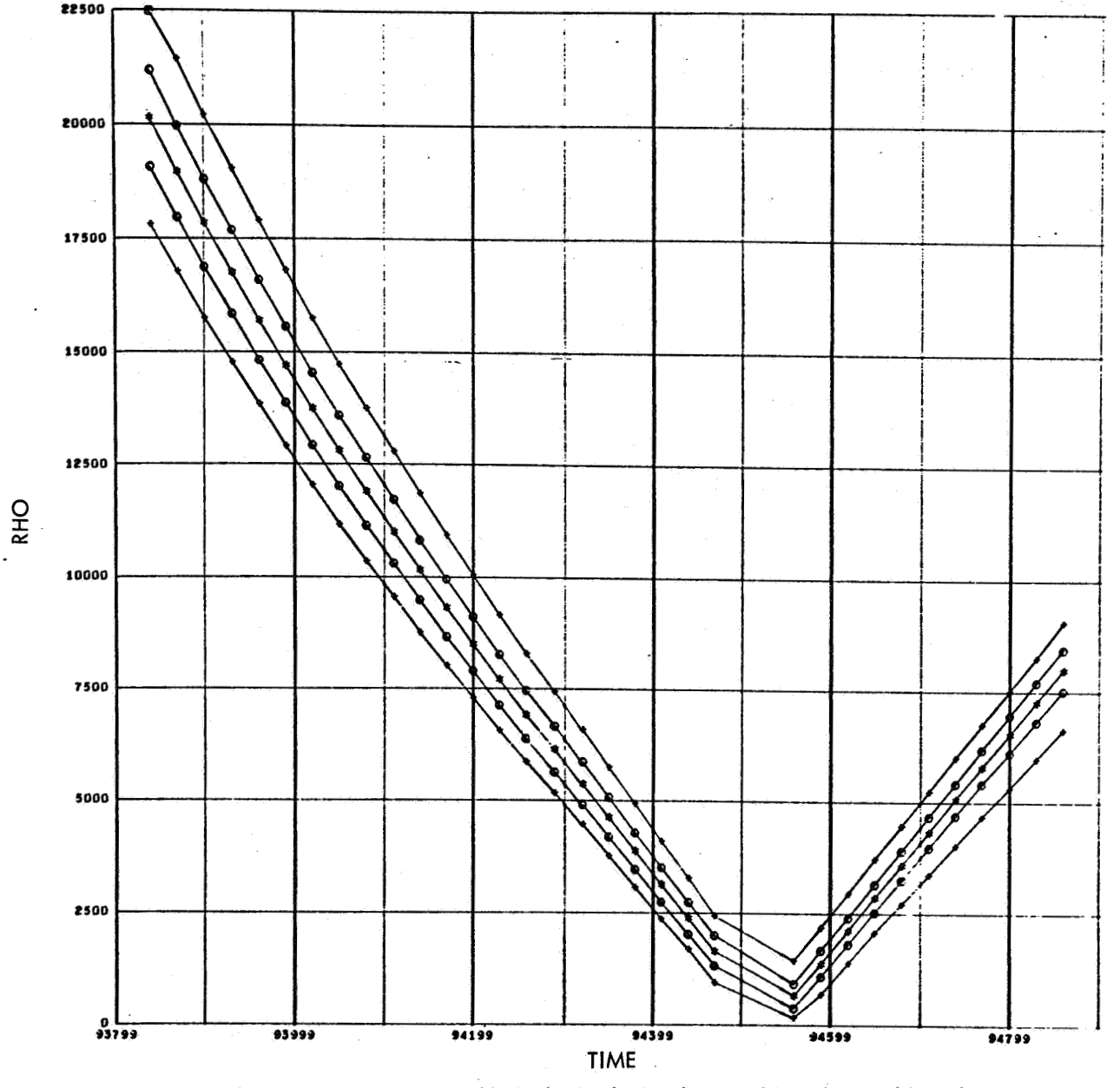

Figure 53. Relative Range with 12 Marks Angle Tracking and Nondiagonal Weighting Matrix from MCC to TPF

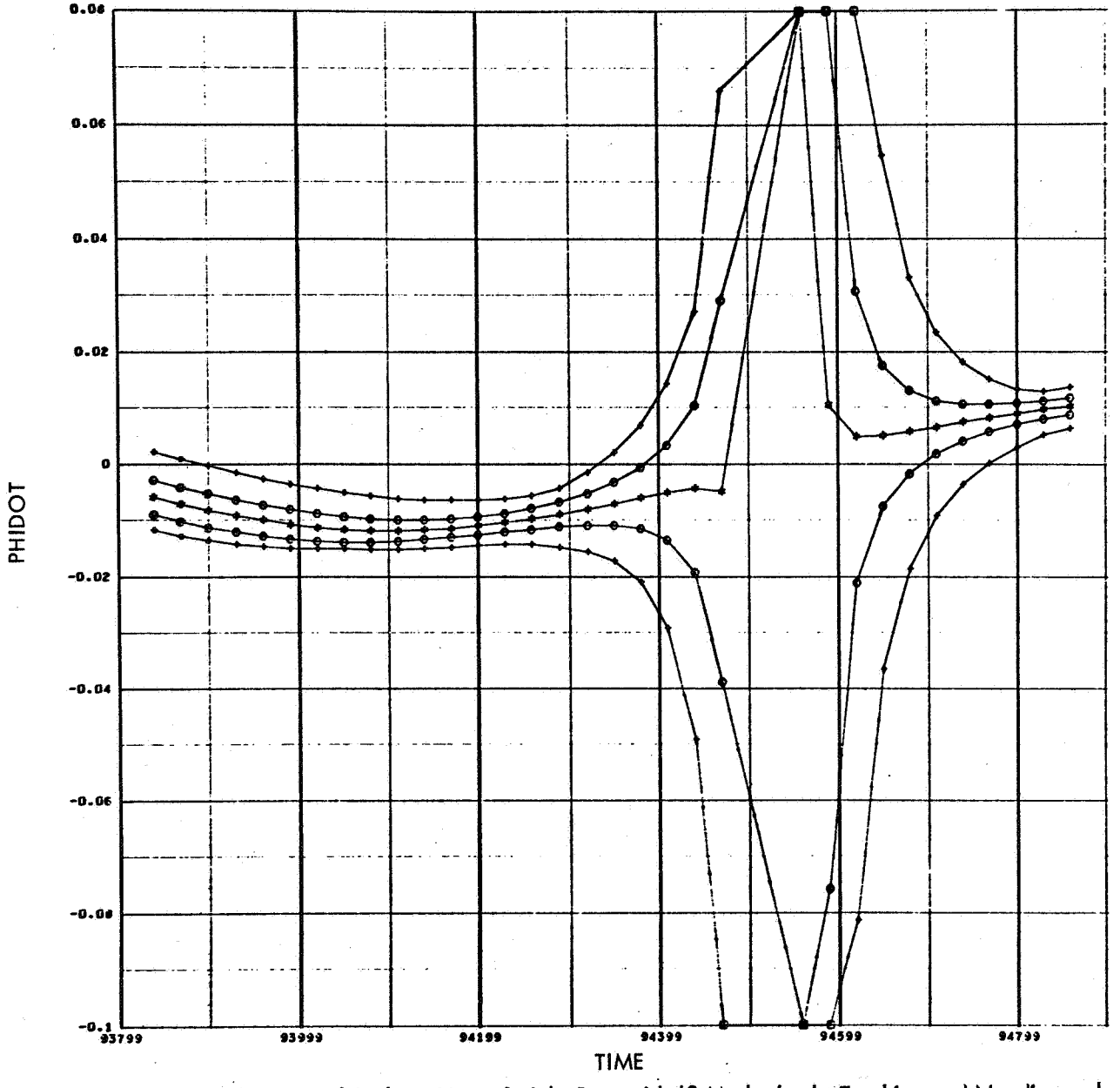

Figure 54. Inertial Inplane Line-of-sight Rate with 12 Marks Angle Tracking and Nondiagonal Weighting Matrix from MCC to TPF

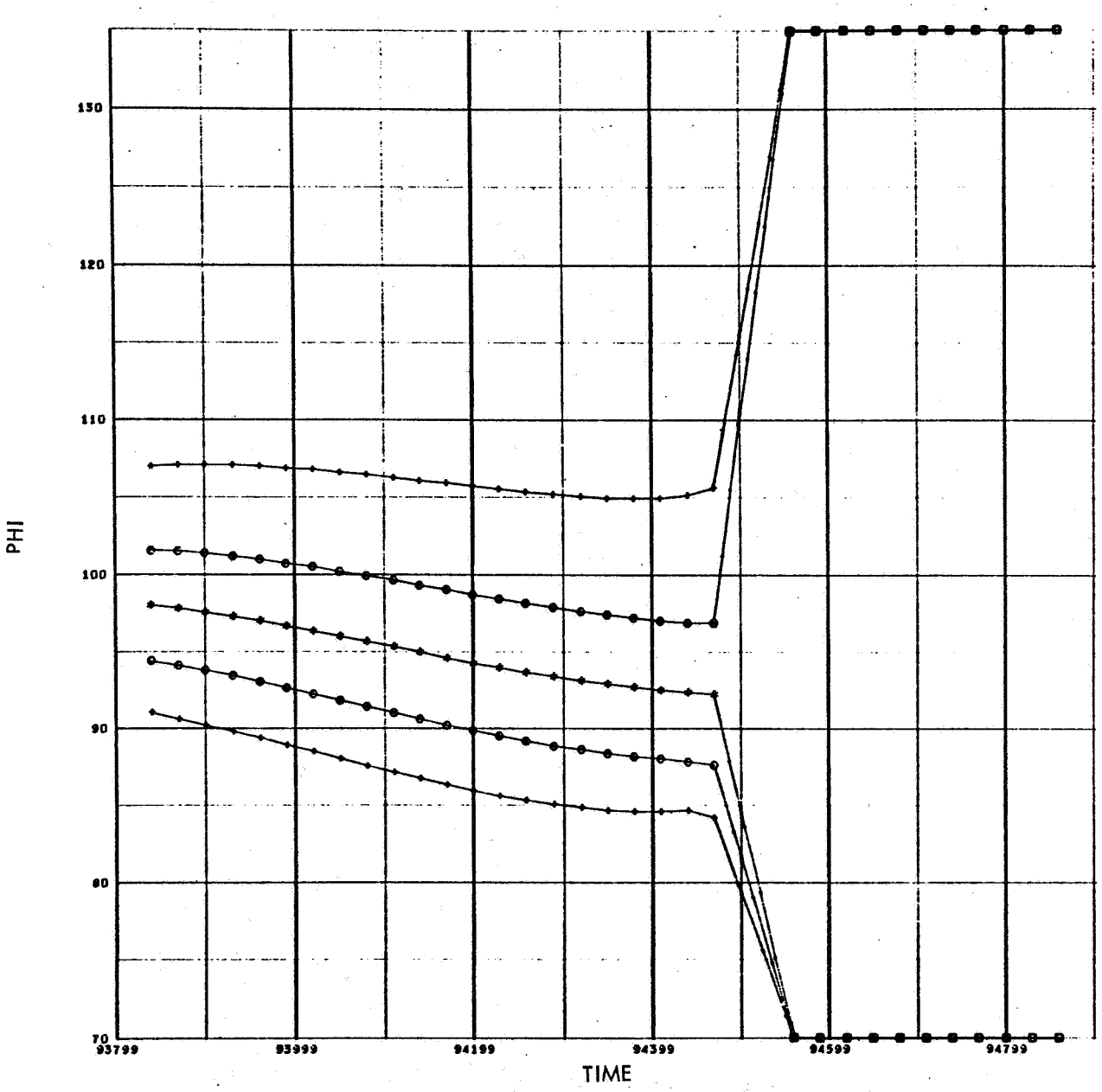

Figure 55. Inertial Inplane Angle with 12 Marks Angle Tracking and Nondiagonal Weighting Matrix from MCC to TPF

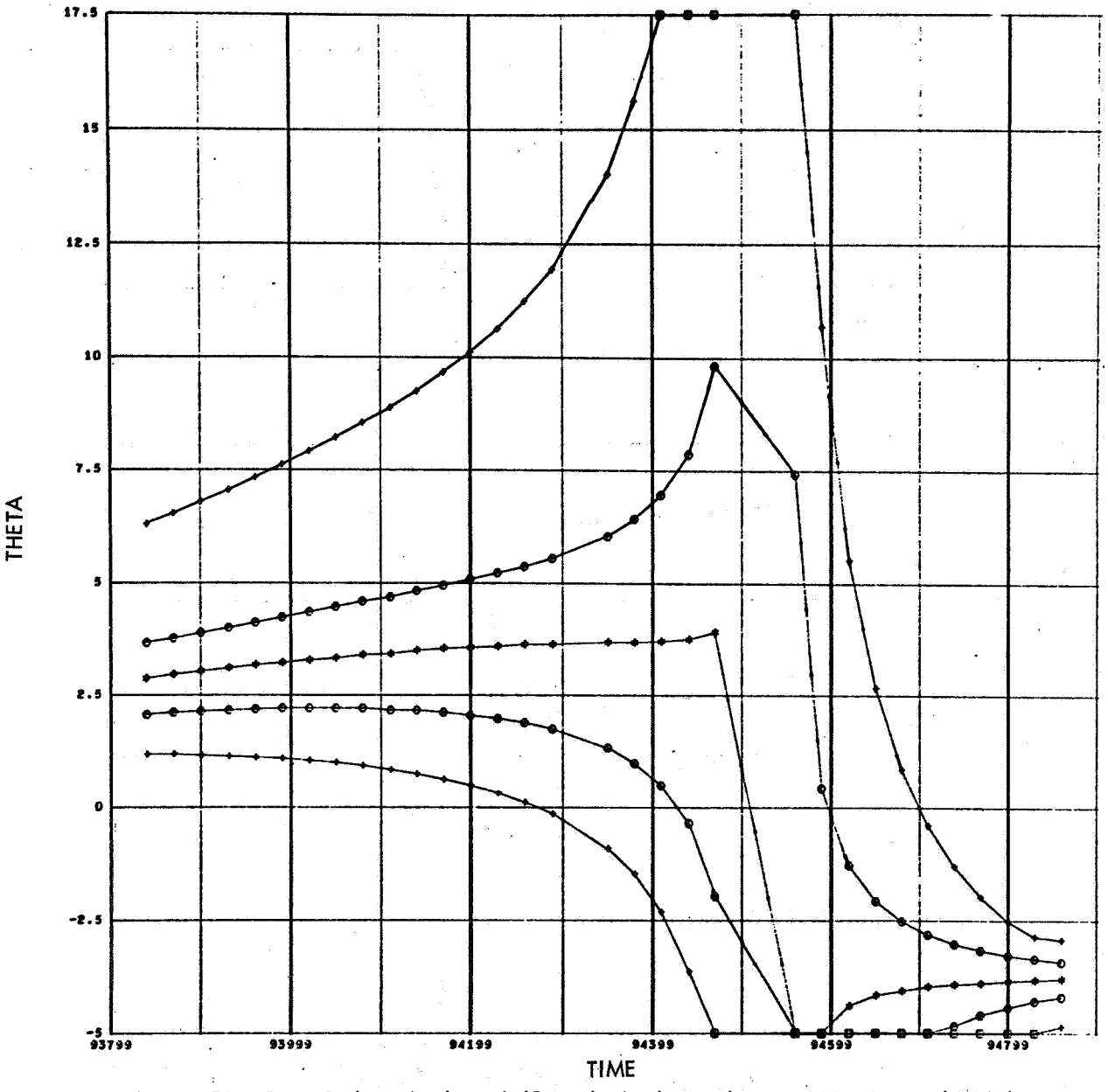

Figure 56. Out-of-plane Angle with 12 Marks Angle Tracking and Nondiagonal Weighting Matrix from MCC to TPF

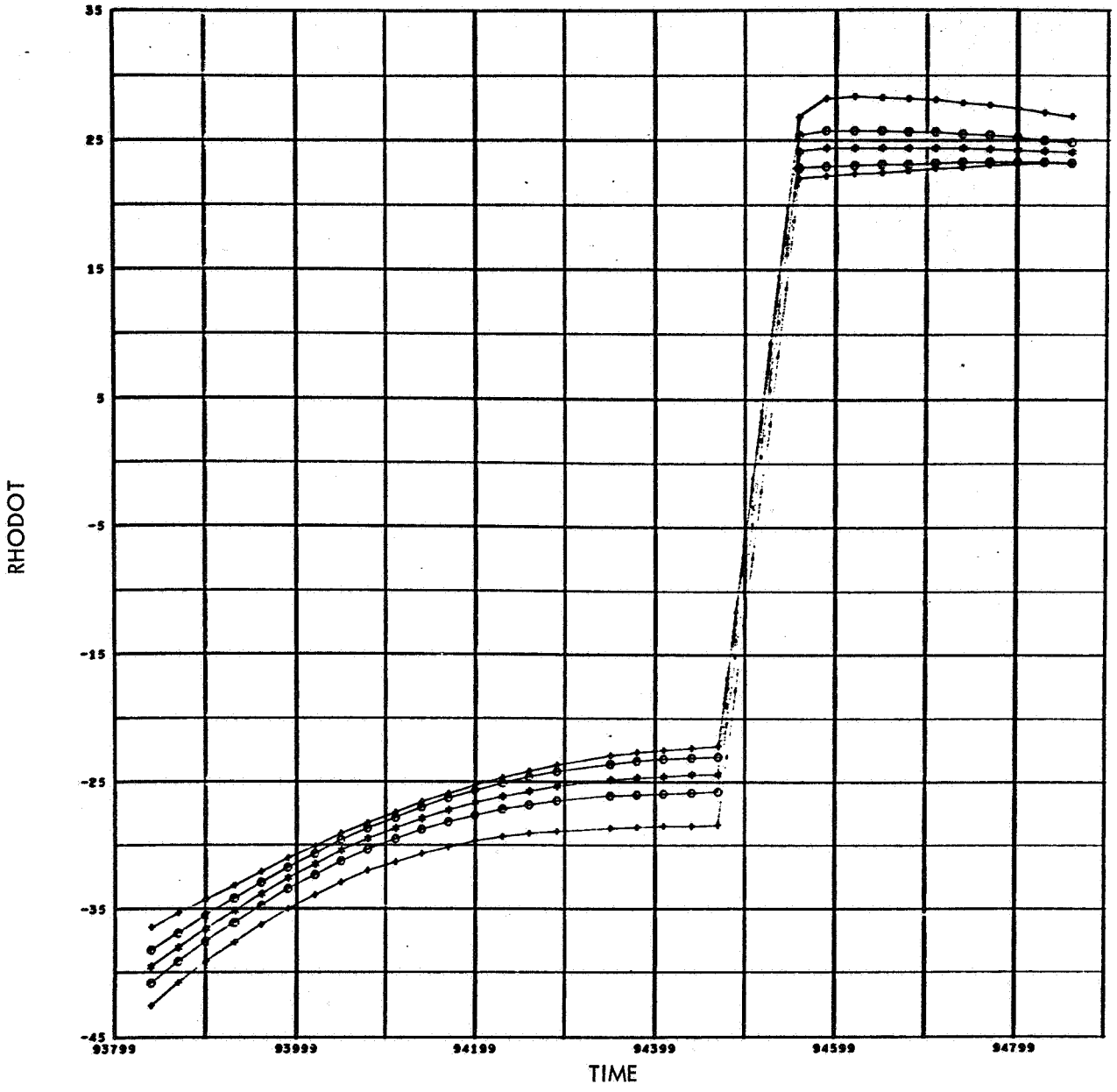

Figure 57. Relative Range Rate with 0 Marks Angle and Range Tracking and Diagonal Weighting Matrix from MCC to TPF

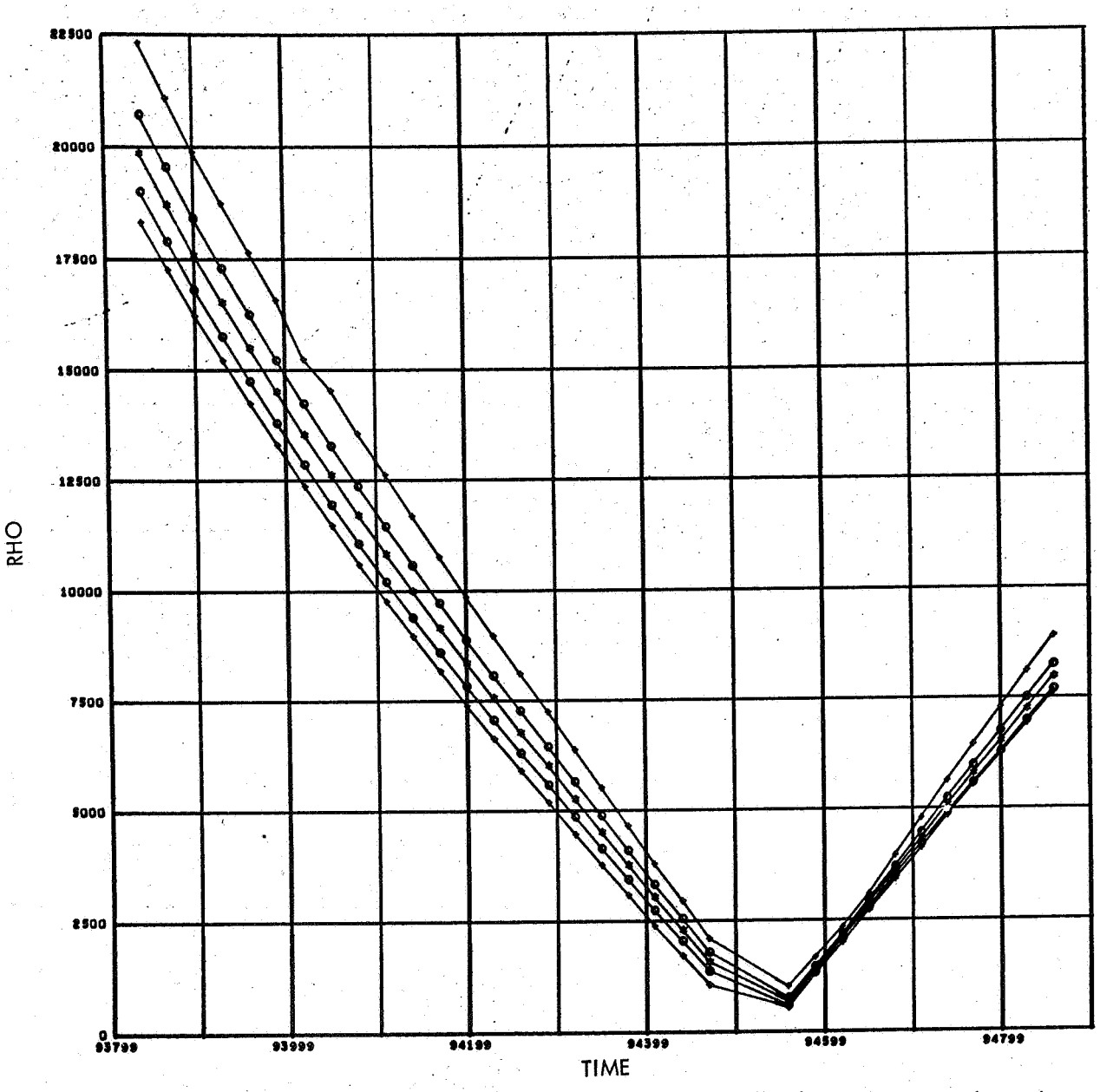

Figure 58. Relative Range with 0 Marks Angle and Range Tracking and Diagonal Weighting Matrix from MCC to TPF

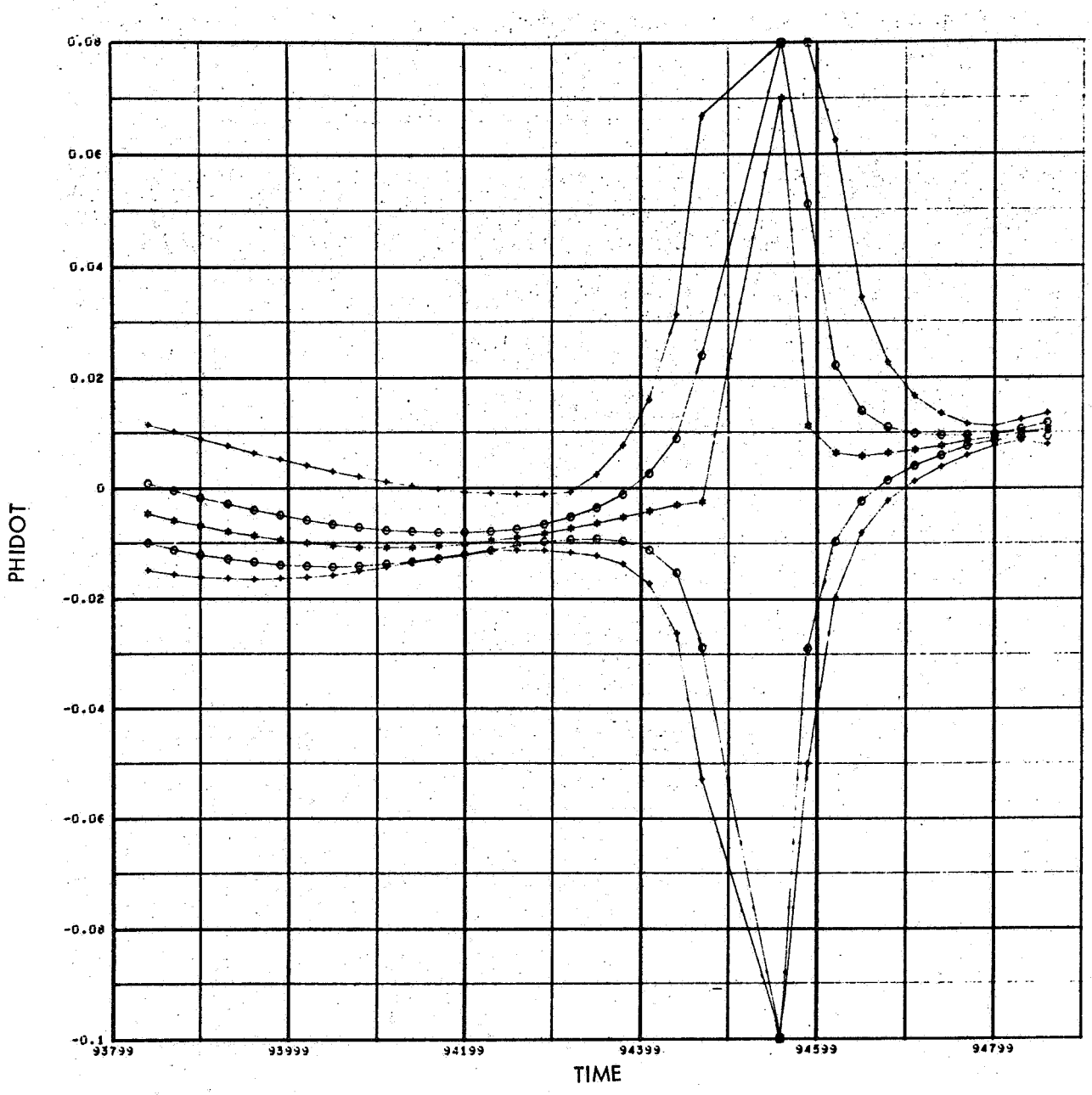

Figure 59. Inertial Inplane Line-of-sight Rate with 0 Marks Angle and Range Tracking and Diagonal Weighting Matrix from MCC to TPF

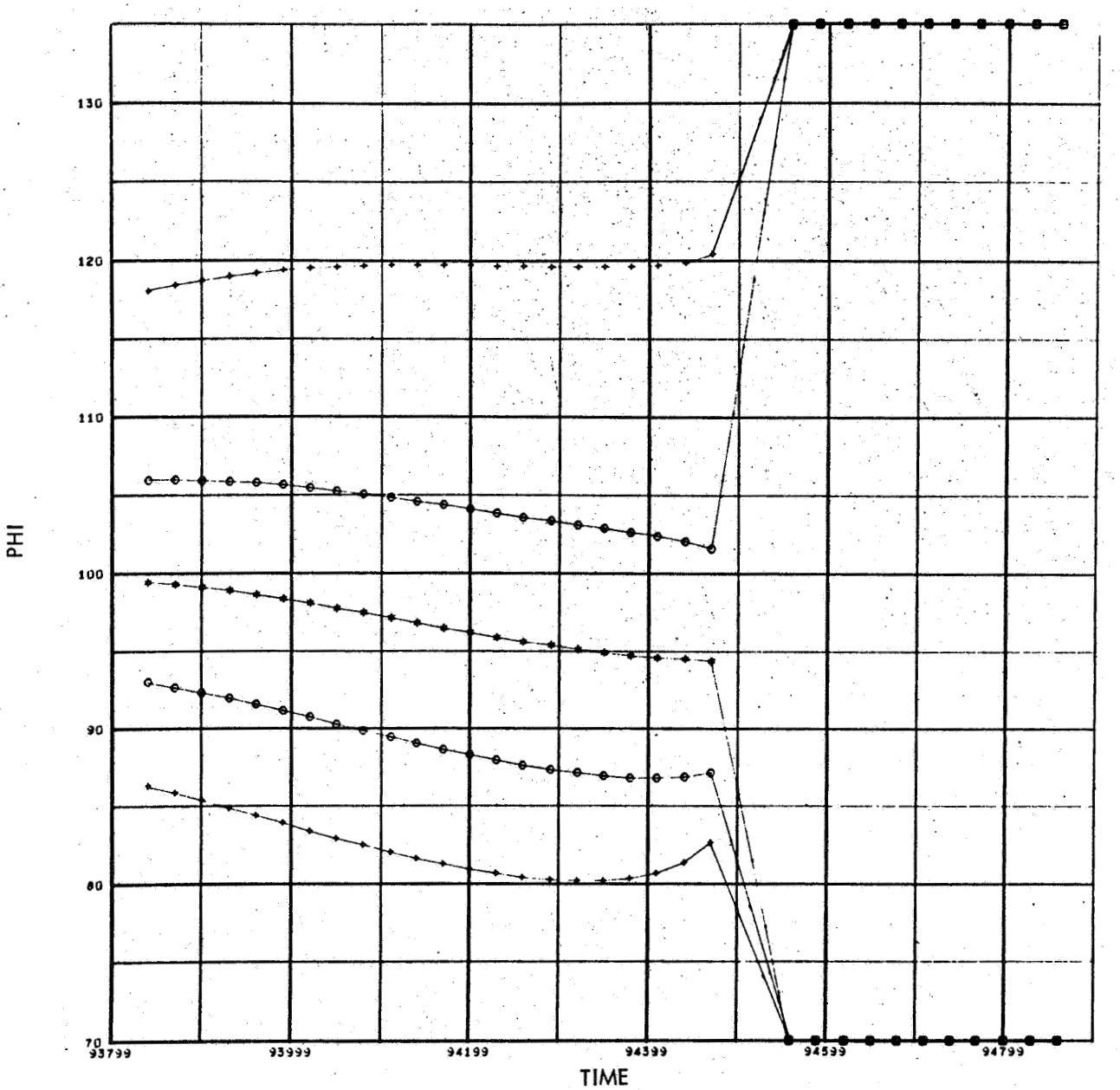

Figure 60. Inertial Inplane Angle with 0 Marks Angle and Range Tracking and Diagonal Weighting Matrix from MCC to TPF

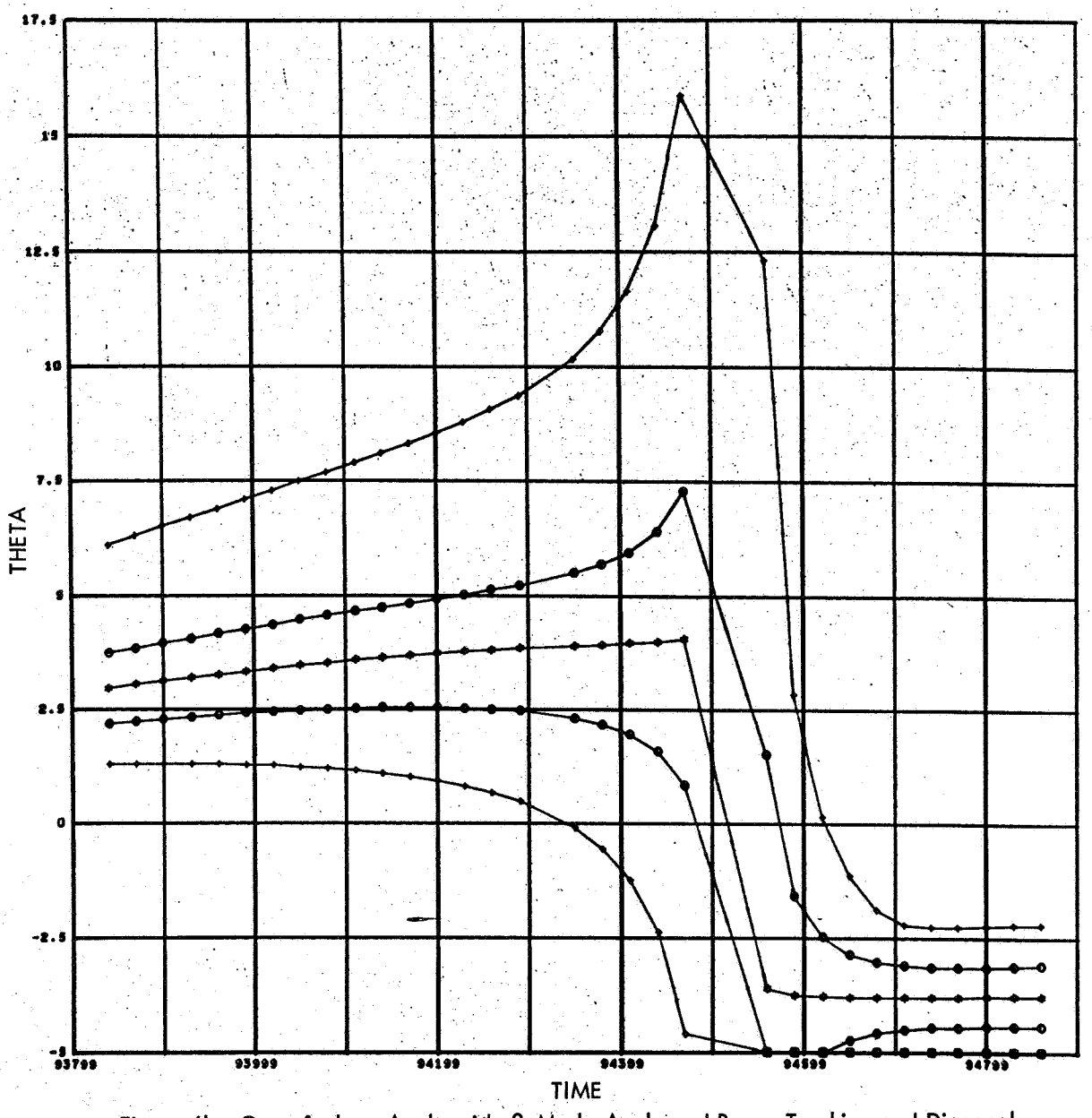

Figure 61. Out-of-plane Angle with 0 Marks Angle and Range Tracking and Diagonal Weighting Matrix from MCC to TPF

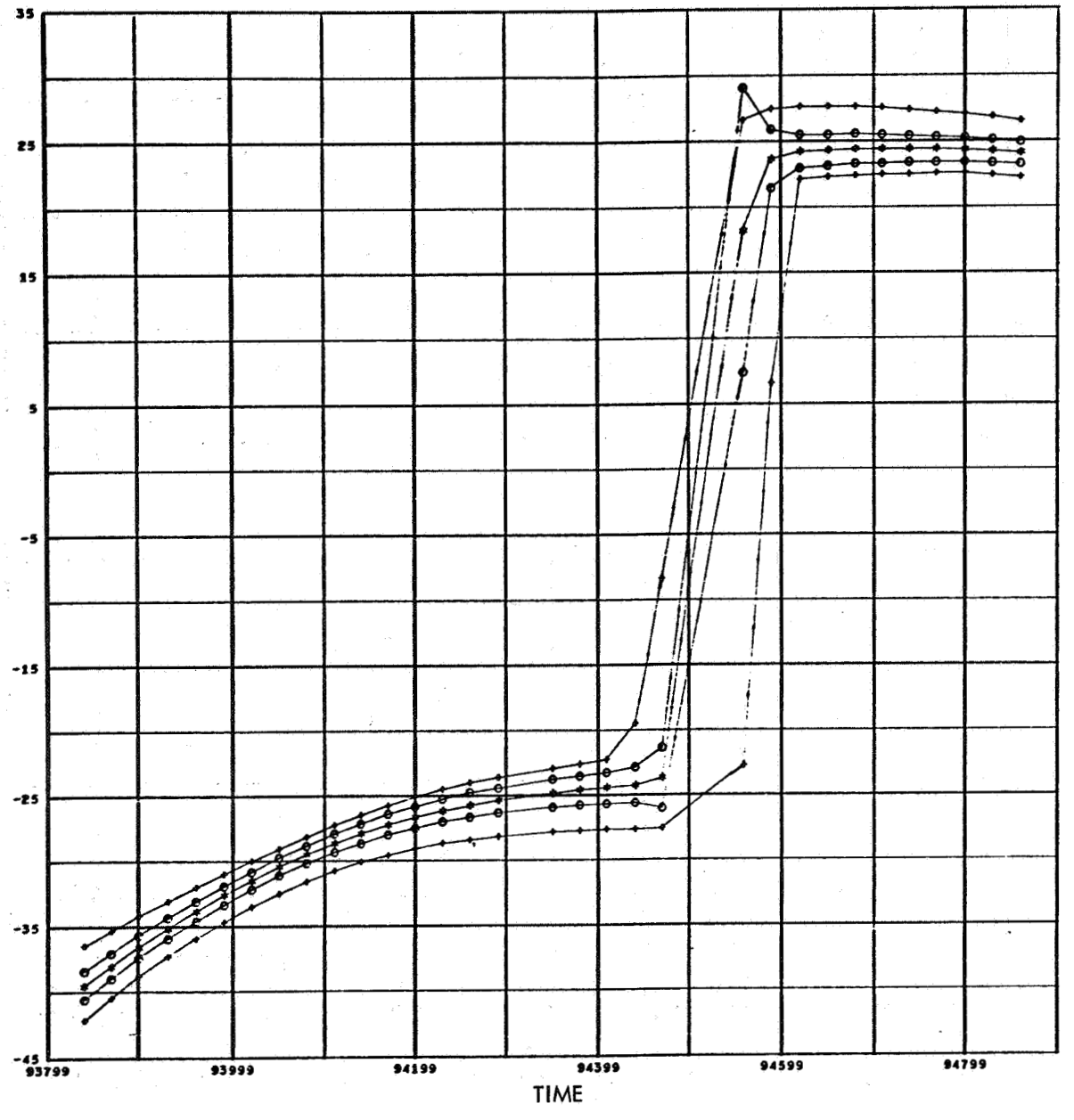

Figure 62. Relative Range Rate with 3 Marks Angle and Range Tracking and Diagonal Weighting Matrix from MCC to TPF

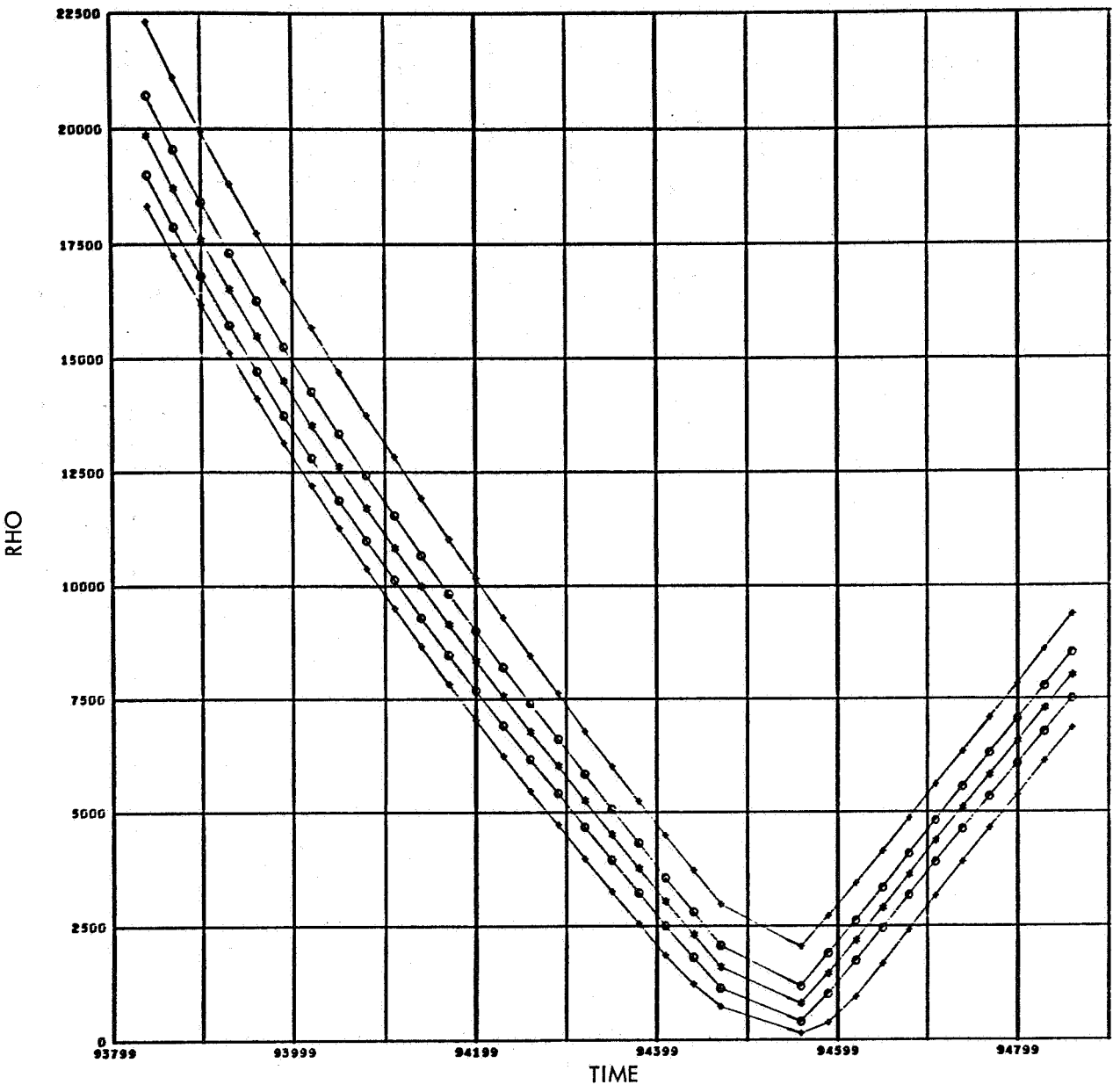

Figure 63. Relative Range with 3 Marks Angle and Range Tracking and Diagonal Weighting Matrix from MCC to TPF

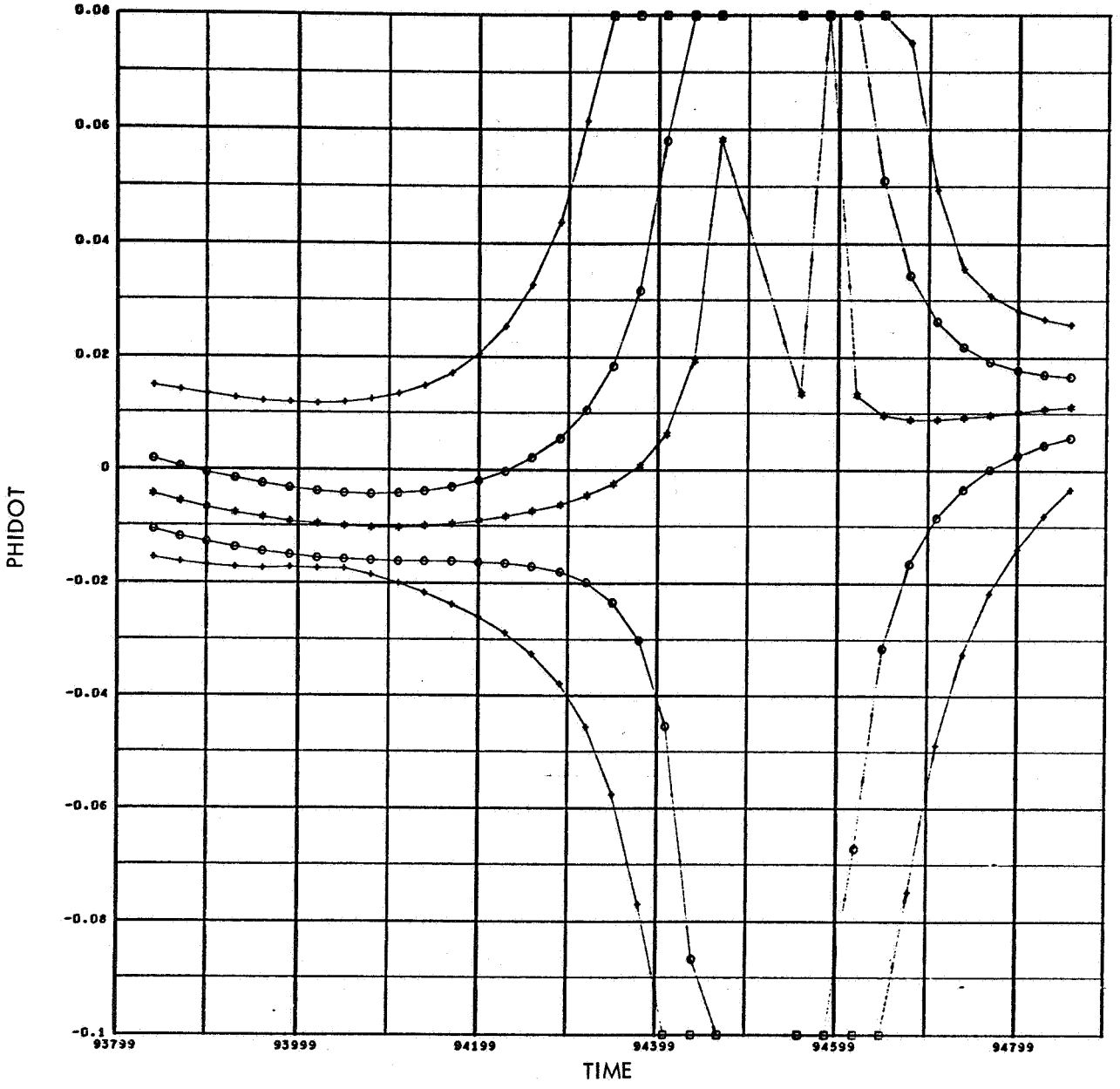

Figure 64. Inertial Inplane Line-of-sight Rate with 3 Marks Angle and Range Tracking and Diagonal Weighting Matrix from MCC to TPF

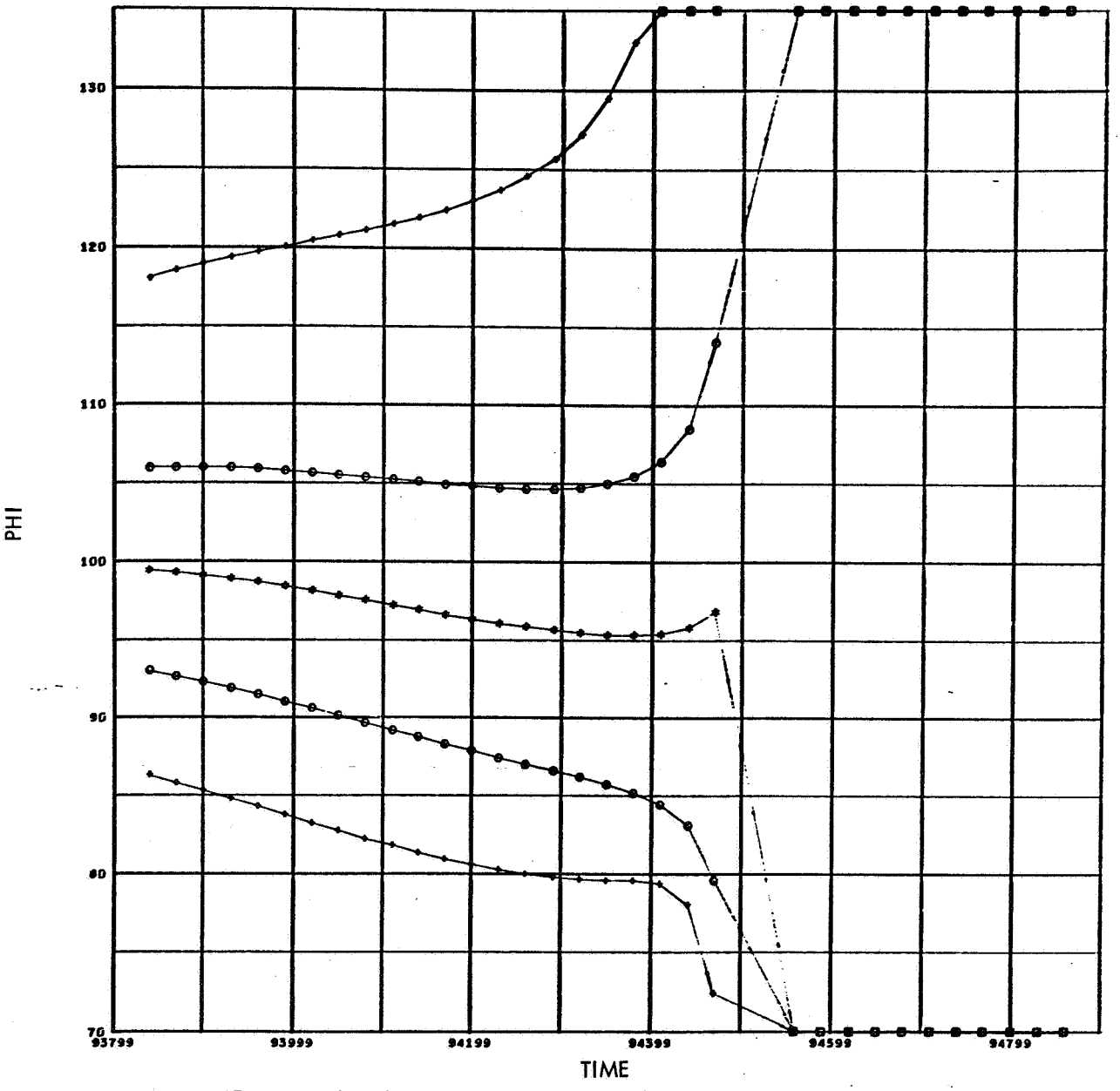

Figure 65. Inertial Inplane Angle with 3 Marks Angle and Range Tracking and Diagonal Weighting Matrix from MCC to TPF

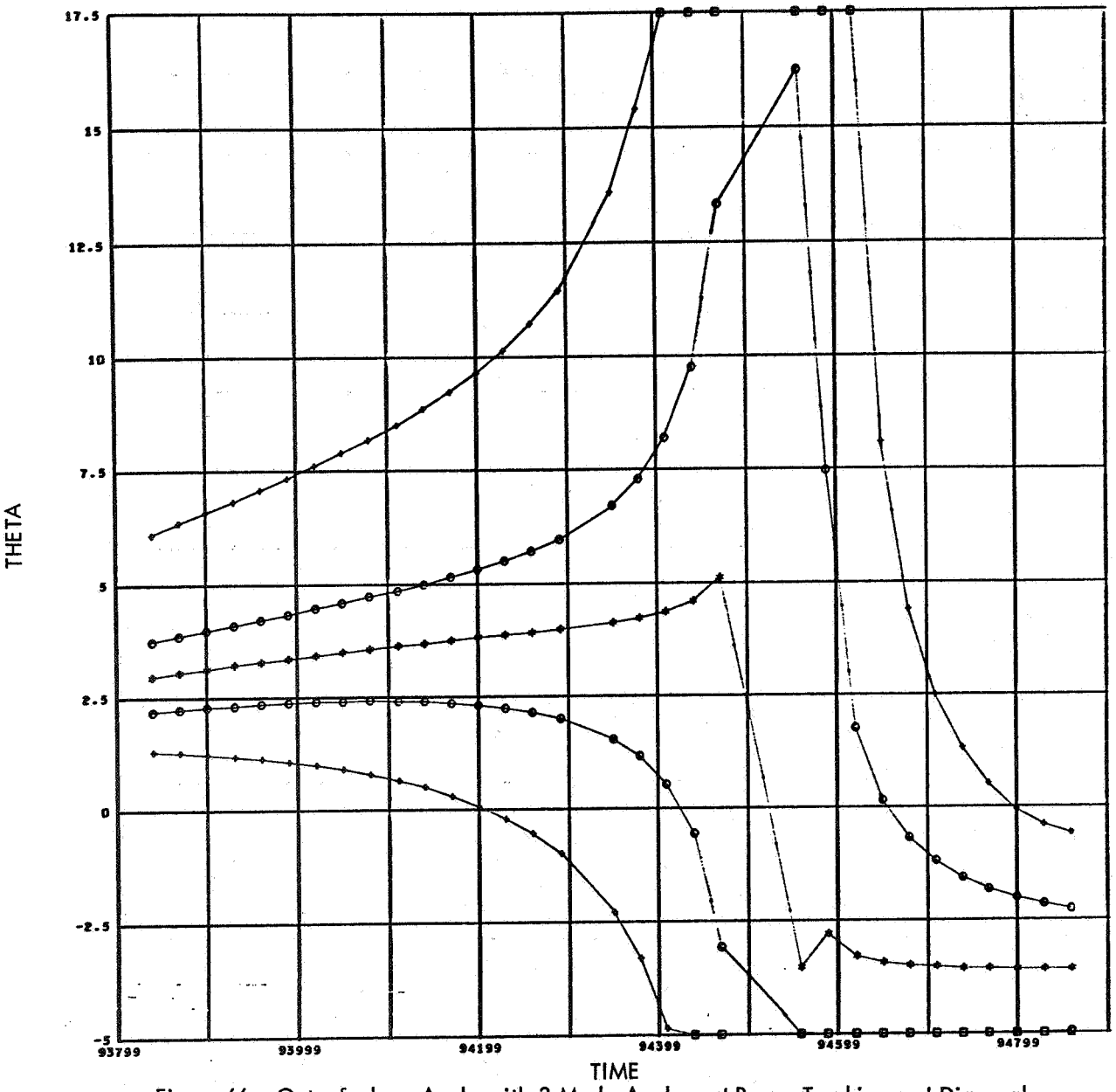

Figure 66. Out-of-plane Angle with 3 Marks Angle and Range Tracking and Diagonal Weighting Matrix from MCC to TPF

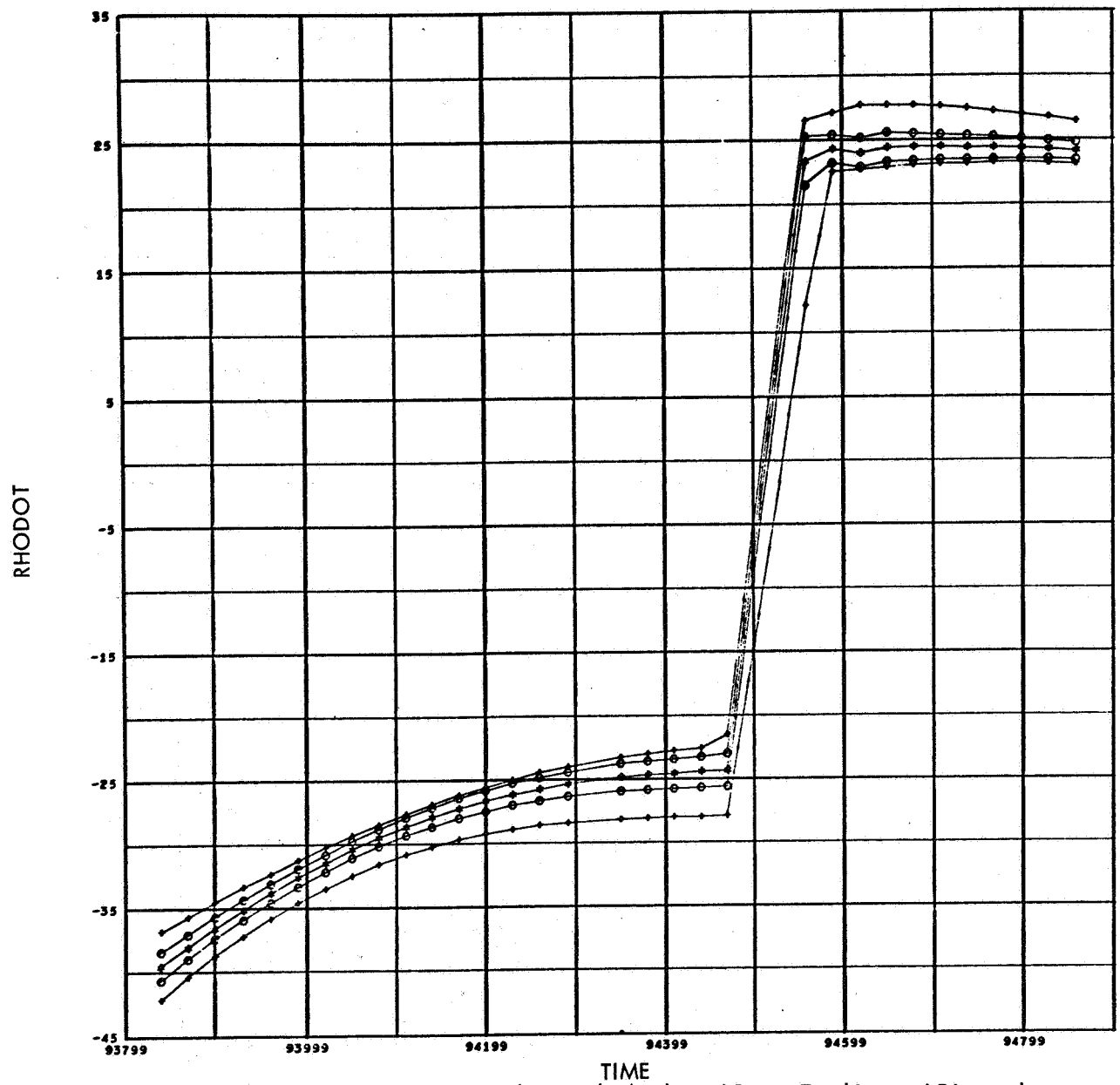

Figure 67. Relative Range Rate with 6 Marks Angle and Range Tracking and Diagonal Weighting Matrix from MCC to TPF

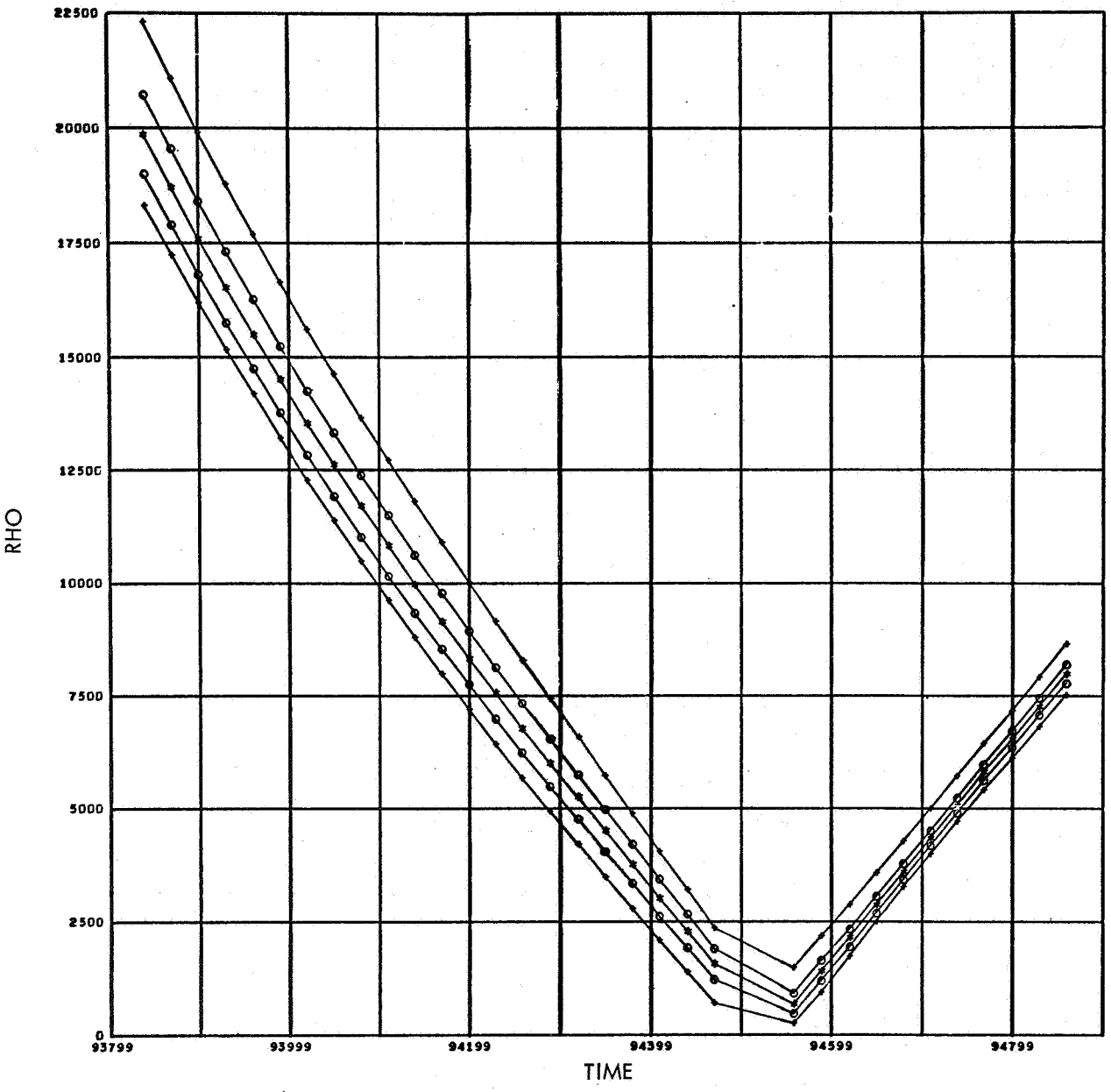

Figure 68. Relative Range with 6 Marks Angle and Range Tracking and Diagonal Weighting Matrix from MCC to TPF

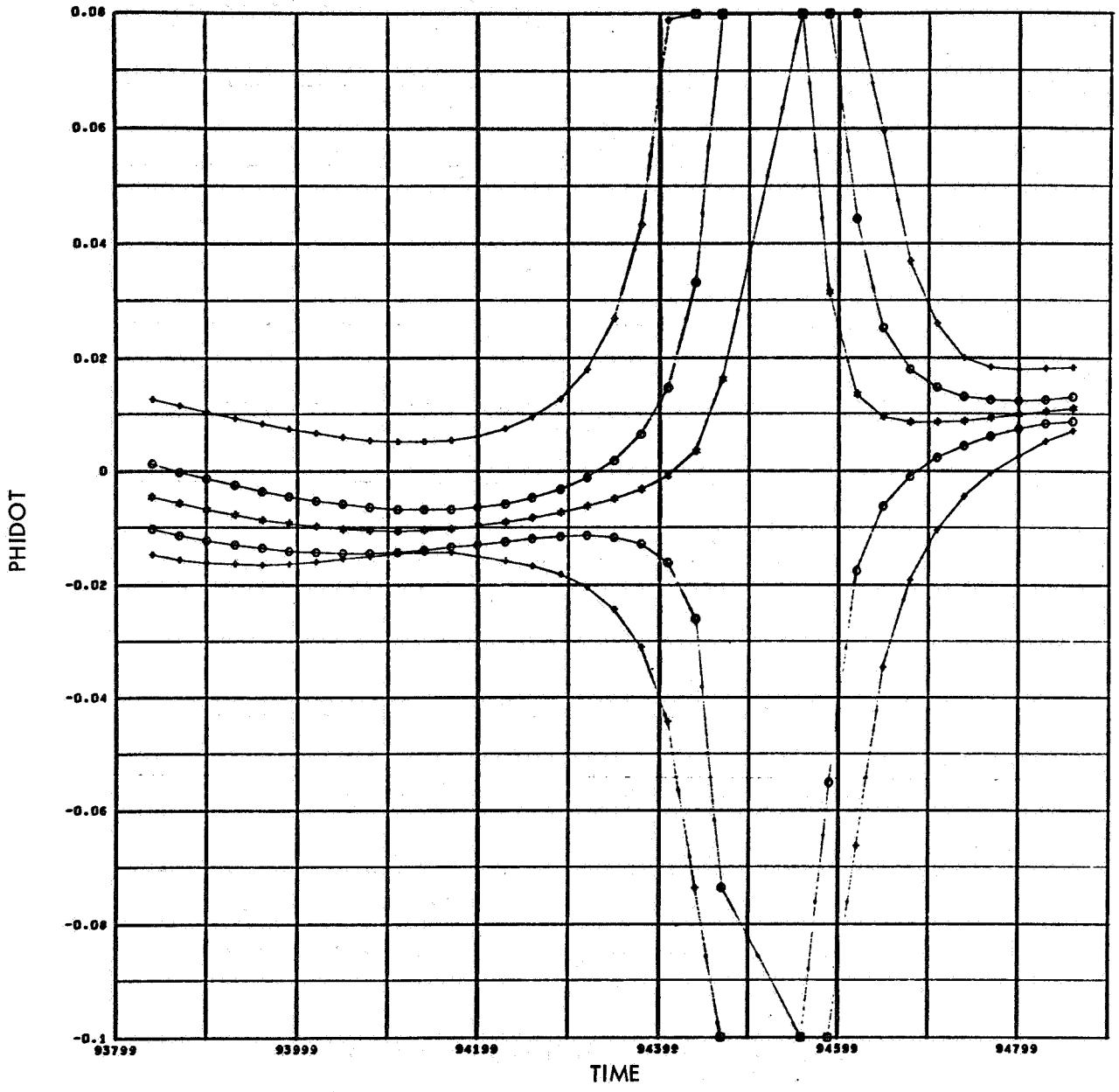

Figure 69. Inertial Inplane Line-of-sight Rate with 6 Marks Angle and Range Tracking and Diagonal Weighting Matrix from MCC to TPF

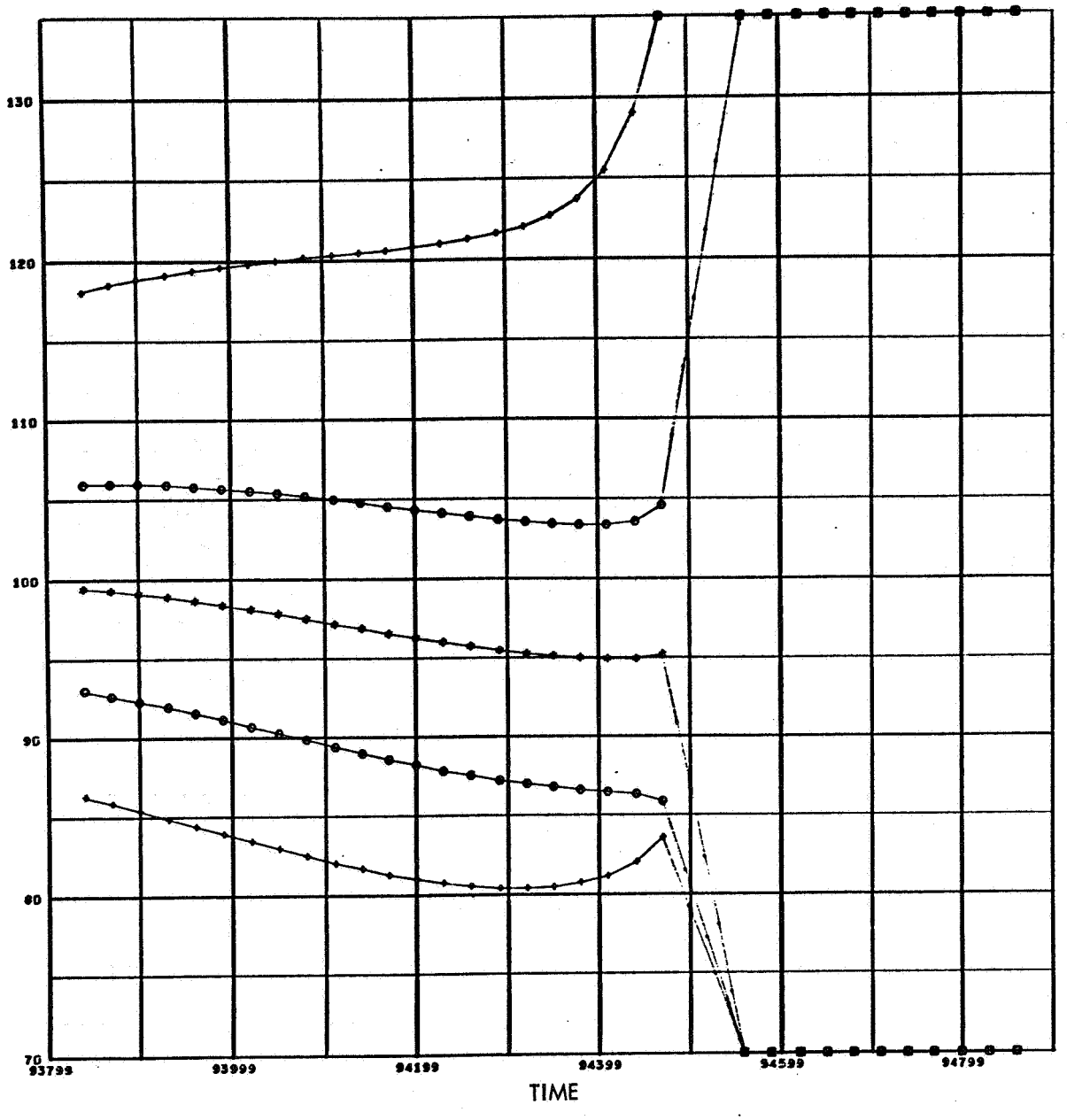

Figure 70. Inertial Inplane Angle with 6 Marks Angle and Range Tracking and Diagonal Weighting Matrix from MCC to TPF

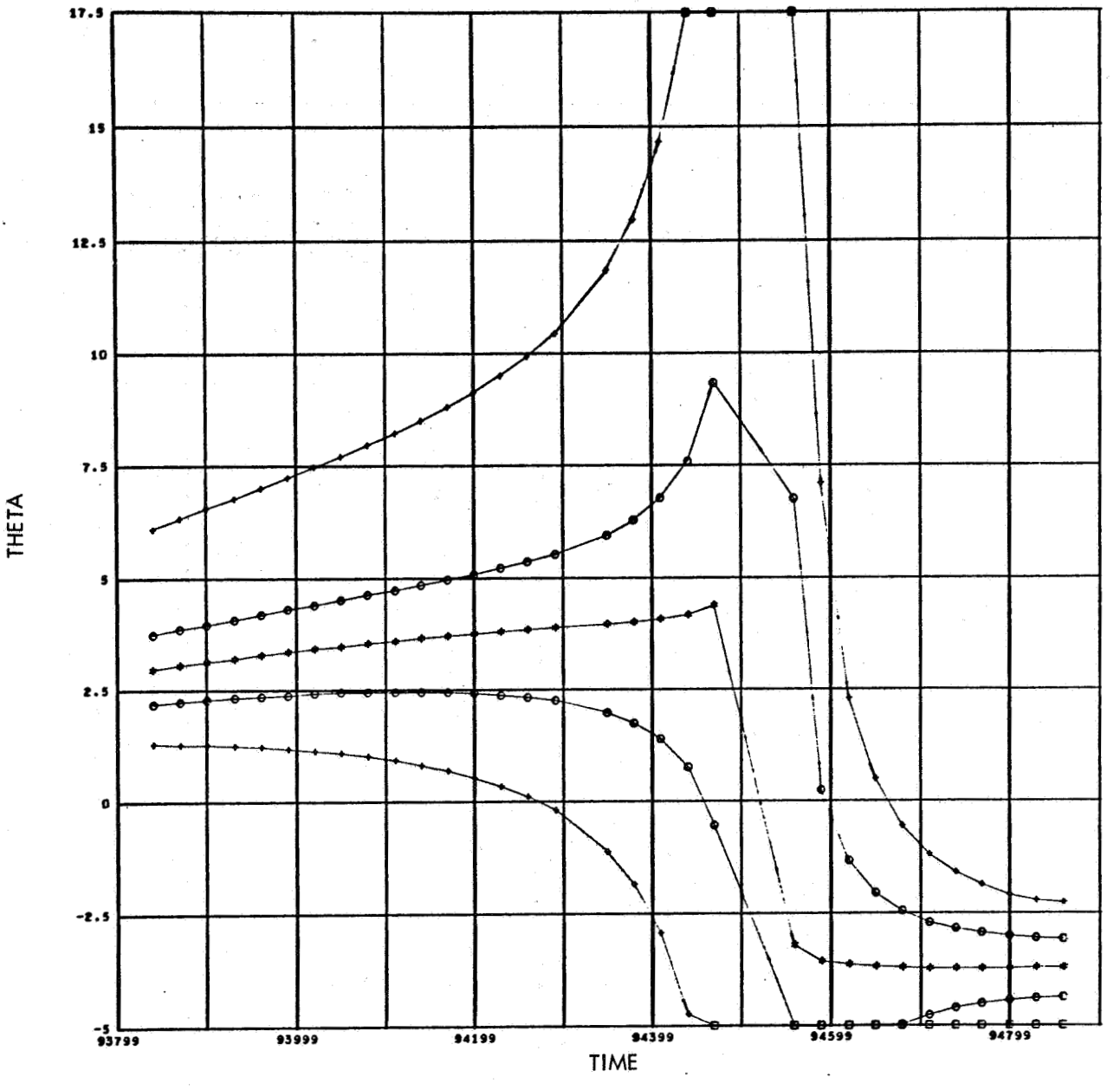

Figure 71. Out-of-plane Angle with 6 Marks Angle and Range Tracking and Diagonal Weighting Matrix from MCC to TPF

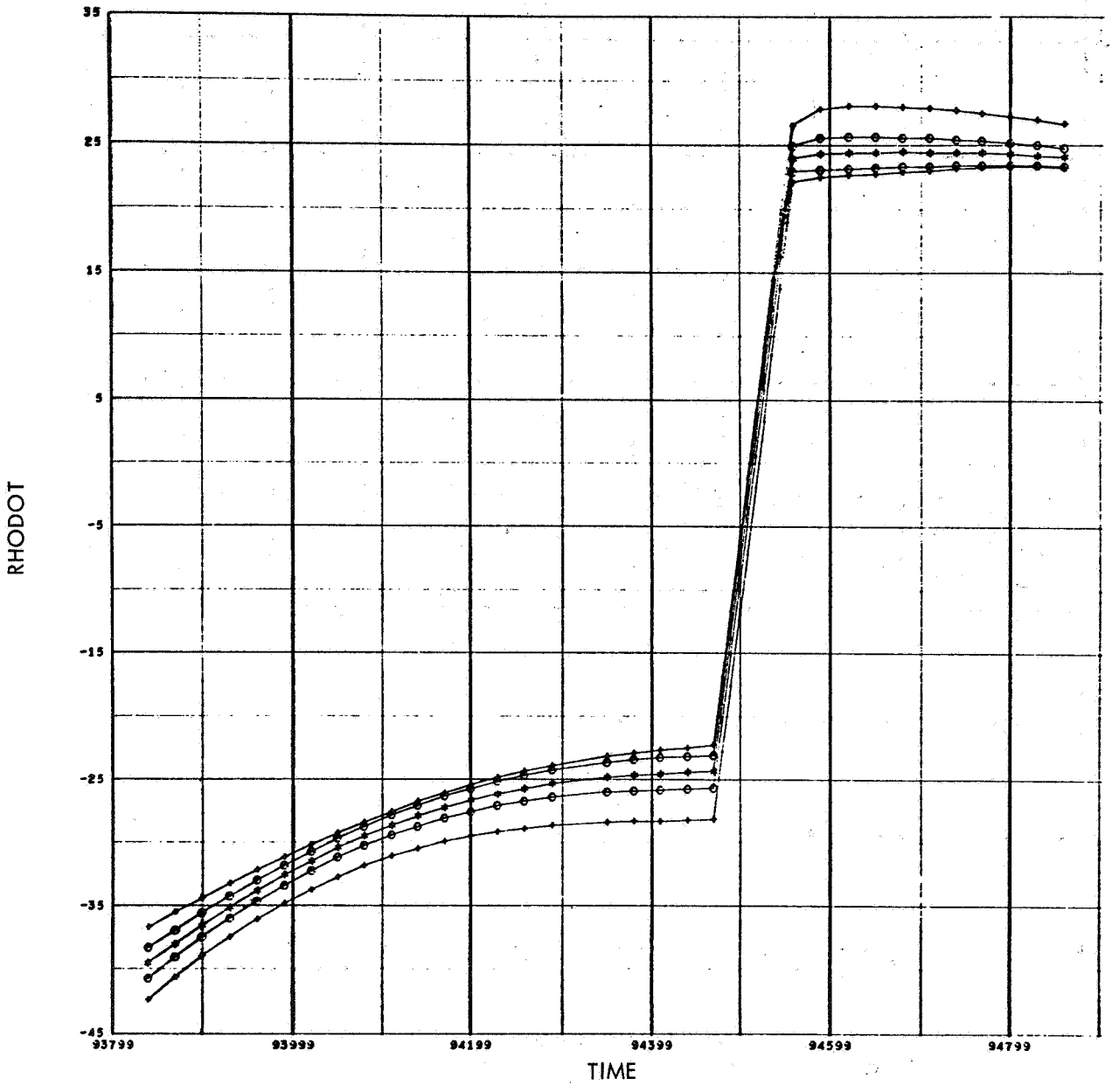

Figure 72. Relative Range Rate with 9 Marks Angle and Range Tracking and Diagonal Weighting Matrix from MCC to TPF

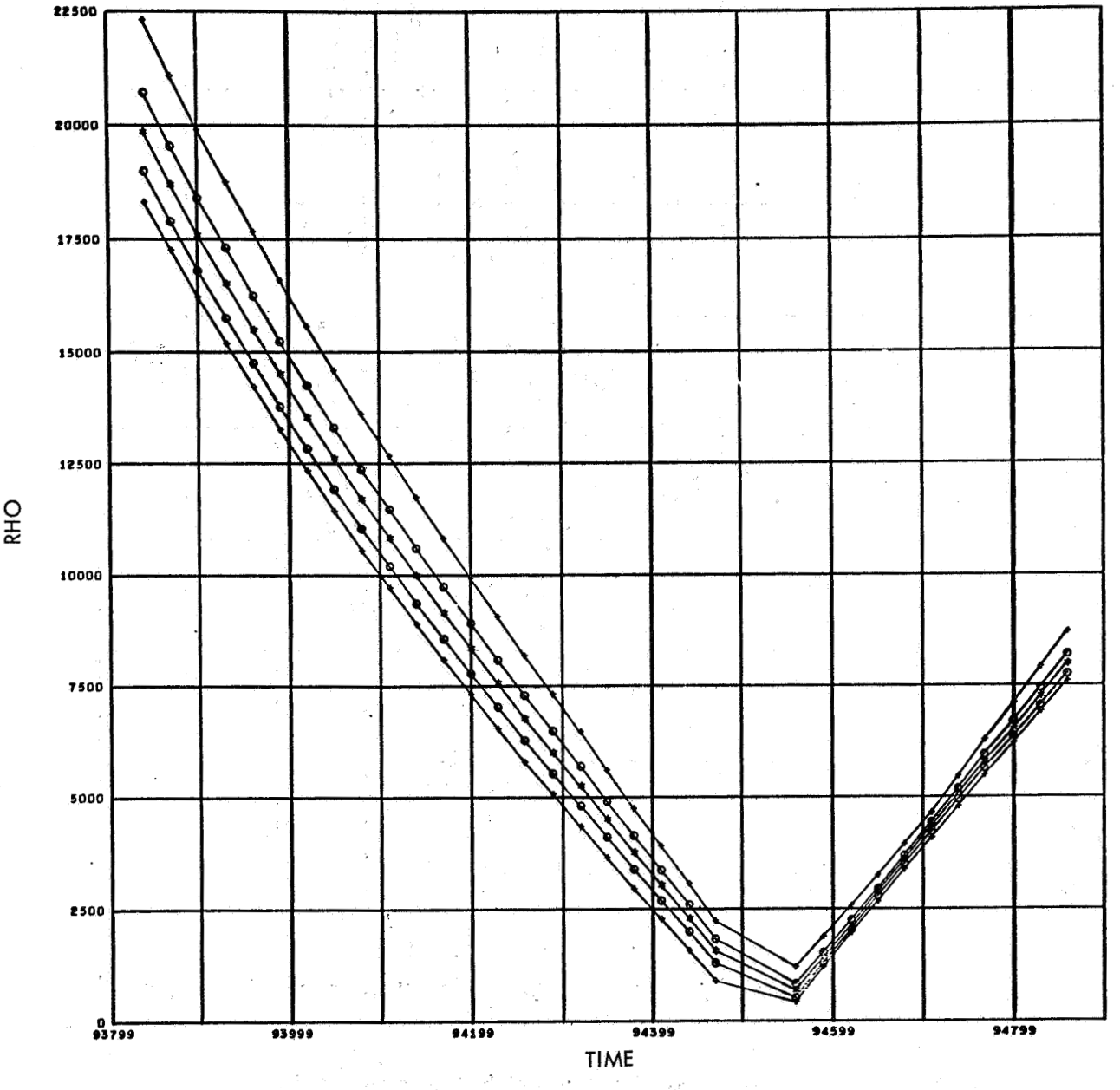

Figure 73. Relative Range with 9 Marks Angle and Range Tracking and Diagonal Weighting Matrix from MCC to TPF

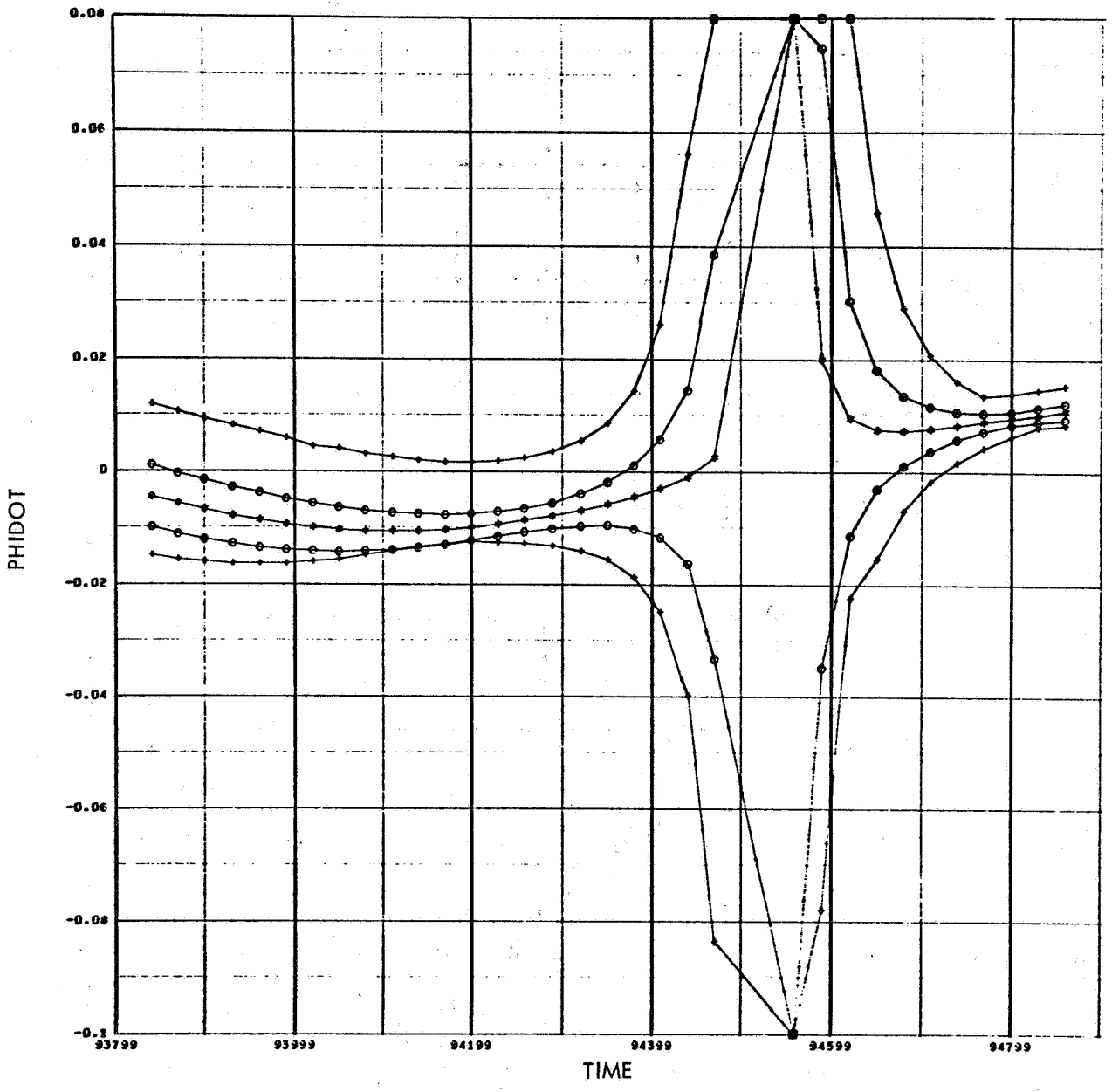

Figure 74. Inertial Inplane Line-of-sight Rate with 9 Marks Angle and Range Tracking and Diagonal Weighting Matrix from MCC to TPF

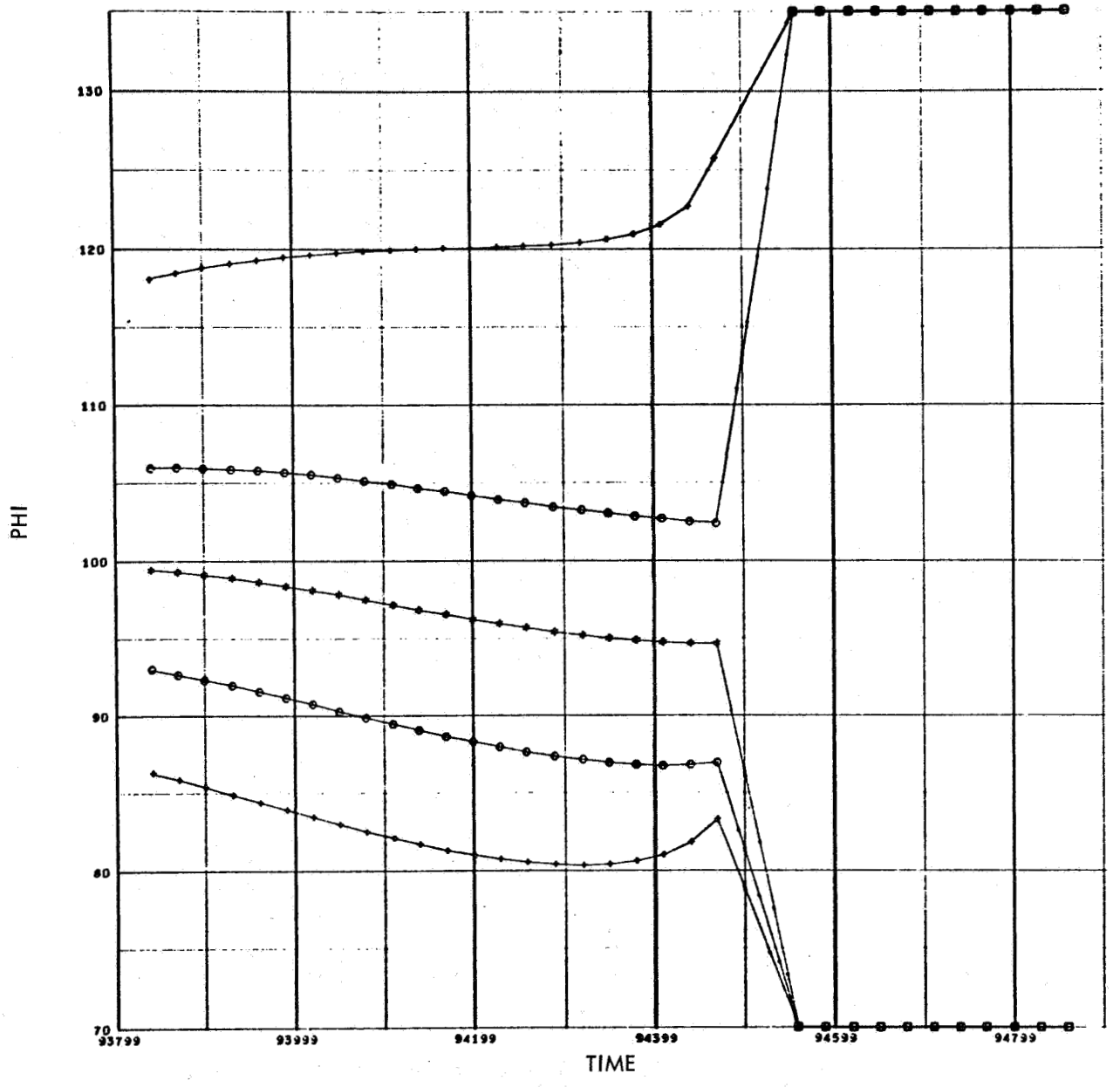

Figure 75. Inertial Inplane Angle with 9 Marks Angle and Range Tracking and Diagonal Weighting Matrix from MCC to TPF

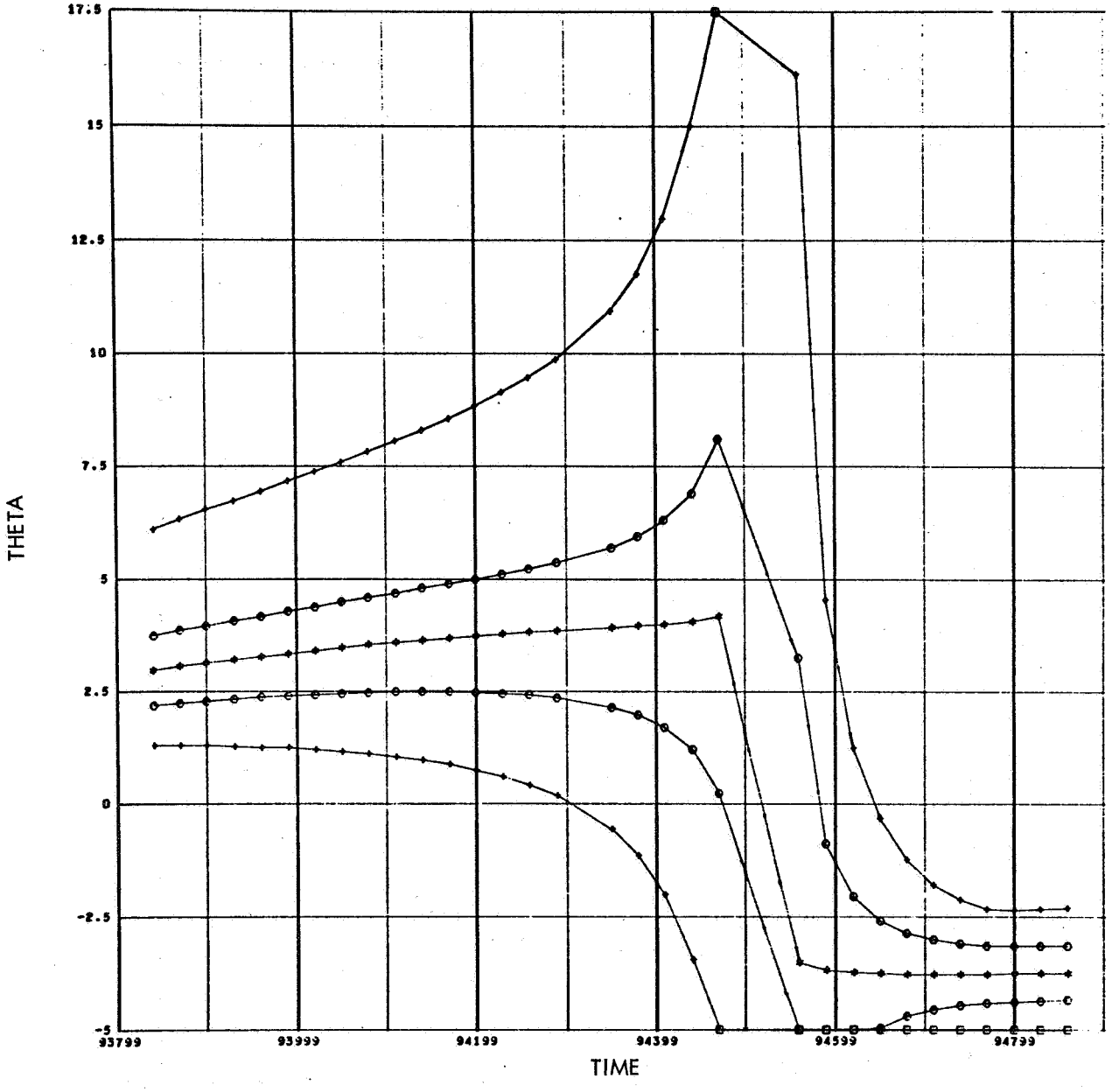

Figure 76. Out-of-plane Angle with 9 Marks Angle and Range Tracking and Diagonal Weighting Matrix from MCC to TPF

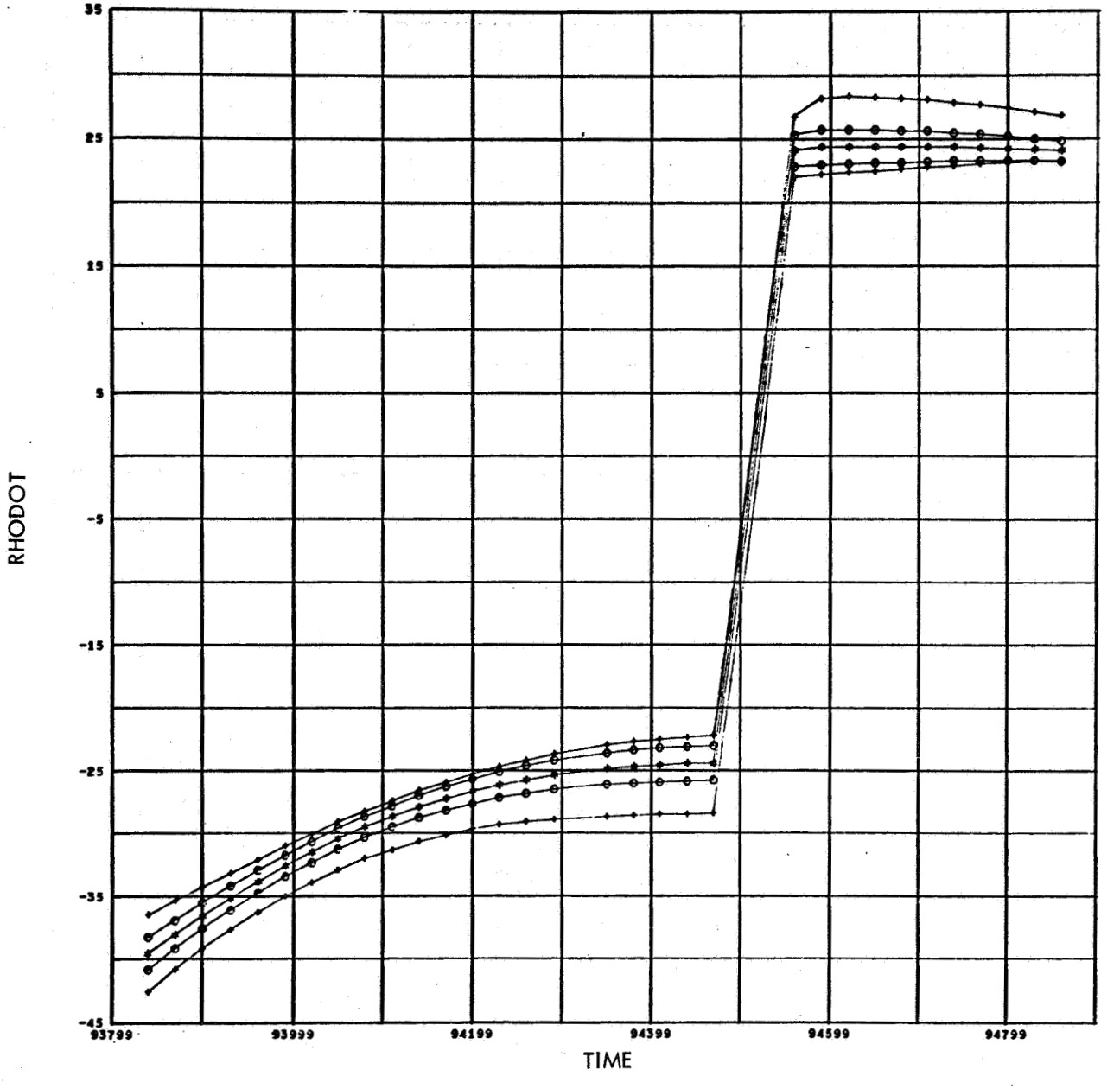

Figure 77. Relative Range Rate with 12 Marks Angle and Range Tracking and Diagonal Weighting Matrix from MCC to TPF

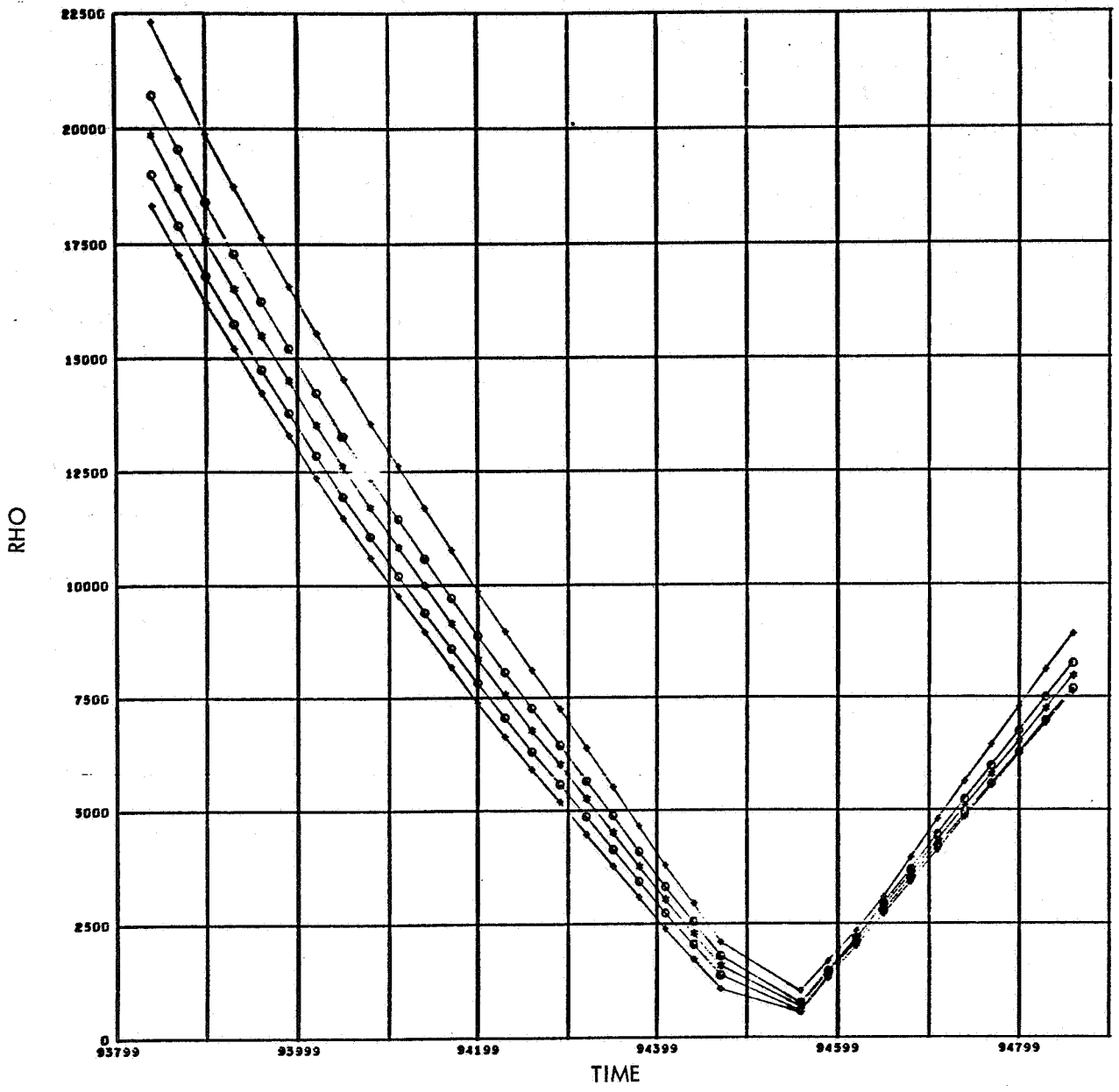

Figure 78. Relative Range with 12 Marks Angle and Range Tracking and Diagonal Weighting Matrix from MCC to TPF

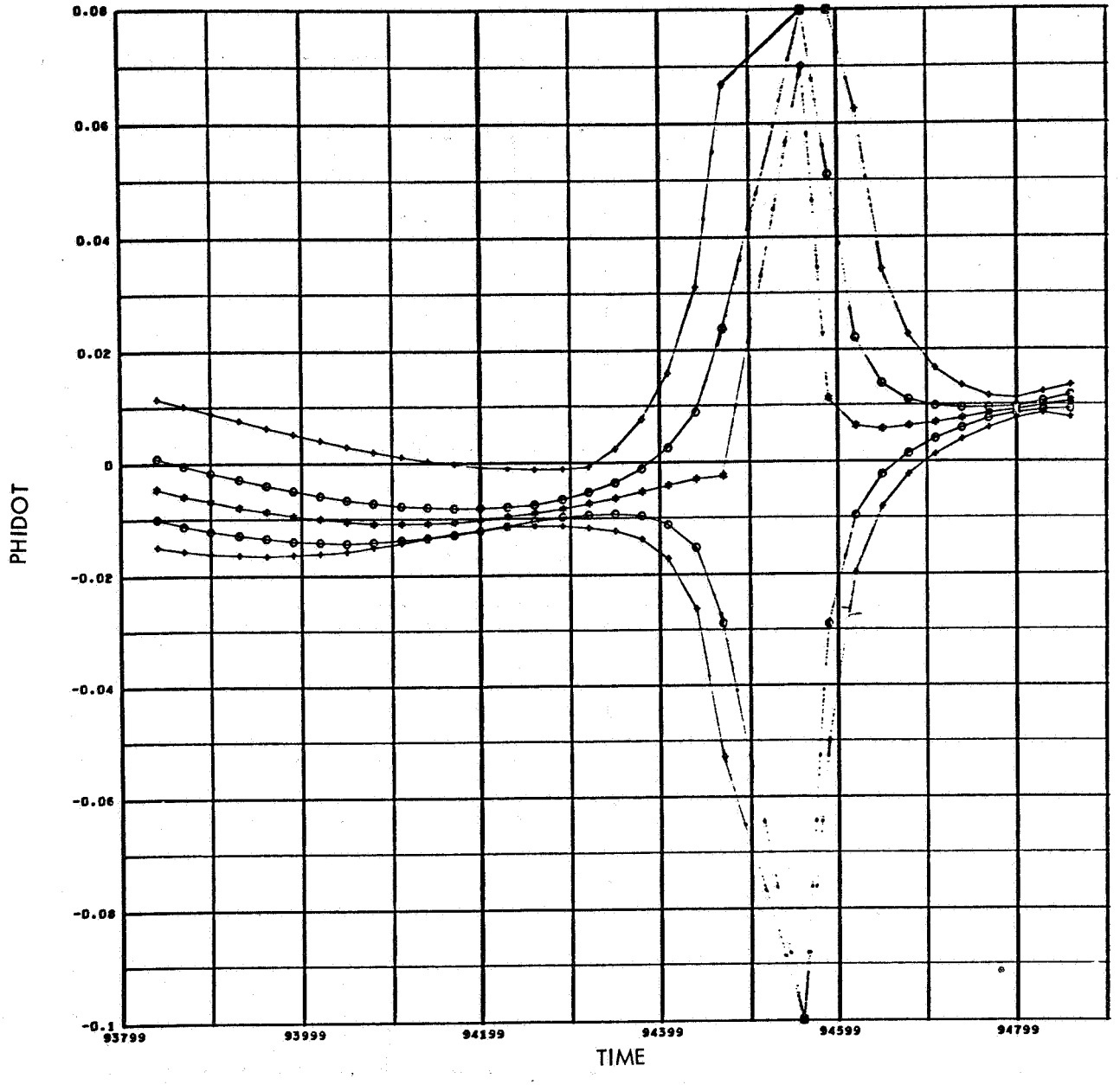

Figure 79. Inertial Inplane Line-of-sight Rate with 12 Marks Angle and Range Tracking and Diagonal Weighting Matrix from MCC to TPF

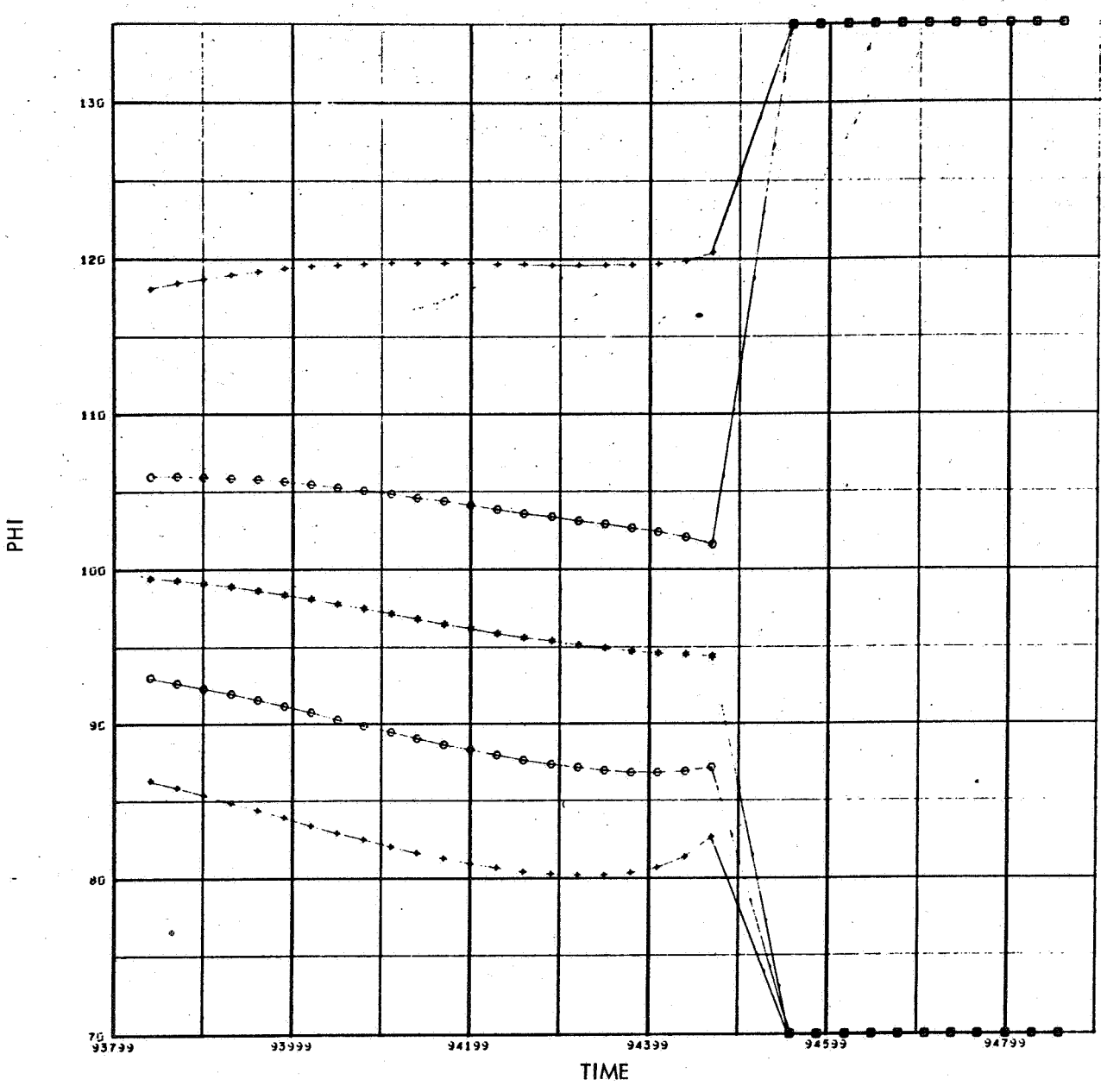

Figure 80. Inertial Inplane Angle with 12 Marks Angle and Range Tracking and Diagonal Weighting Matrix from MCC to TPF

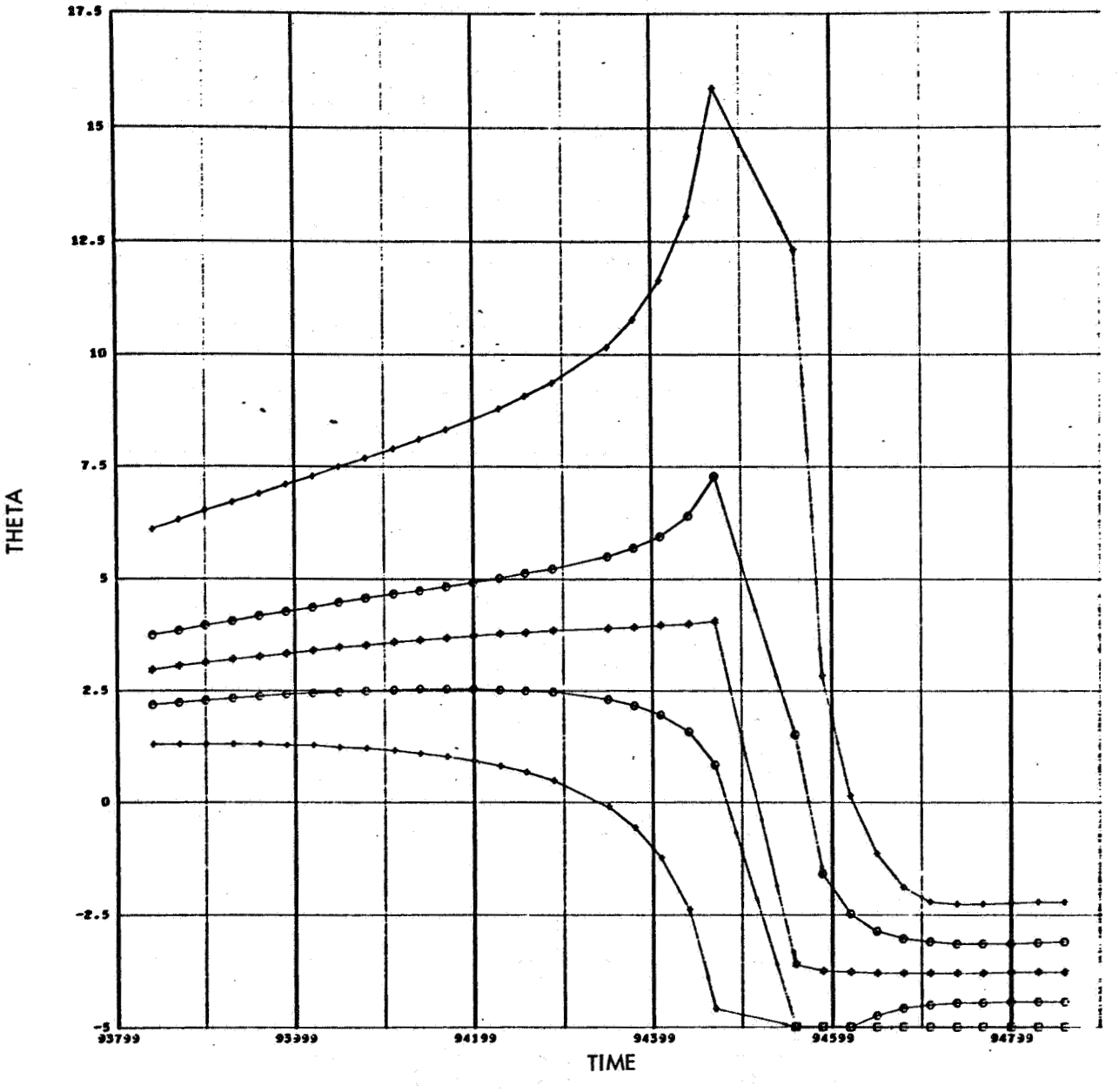

Figure 81. Out-of-plane Angle with 12 Marks Angle and Range Tracking and Diagonal Weighting Matrix from MCC to TPF

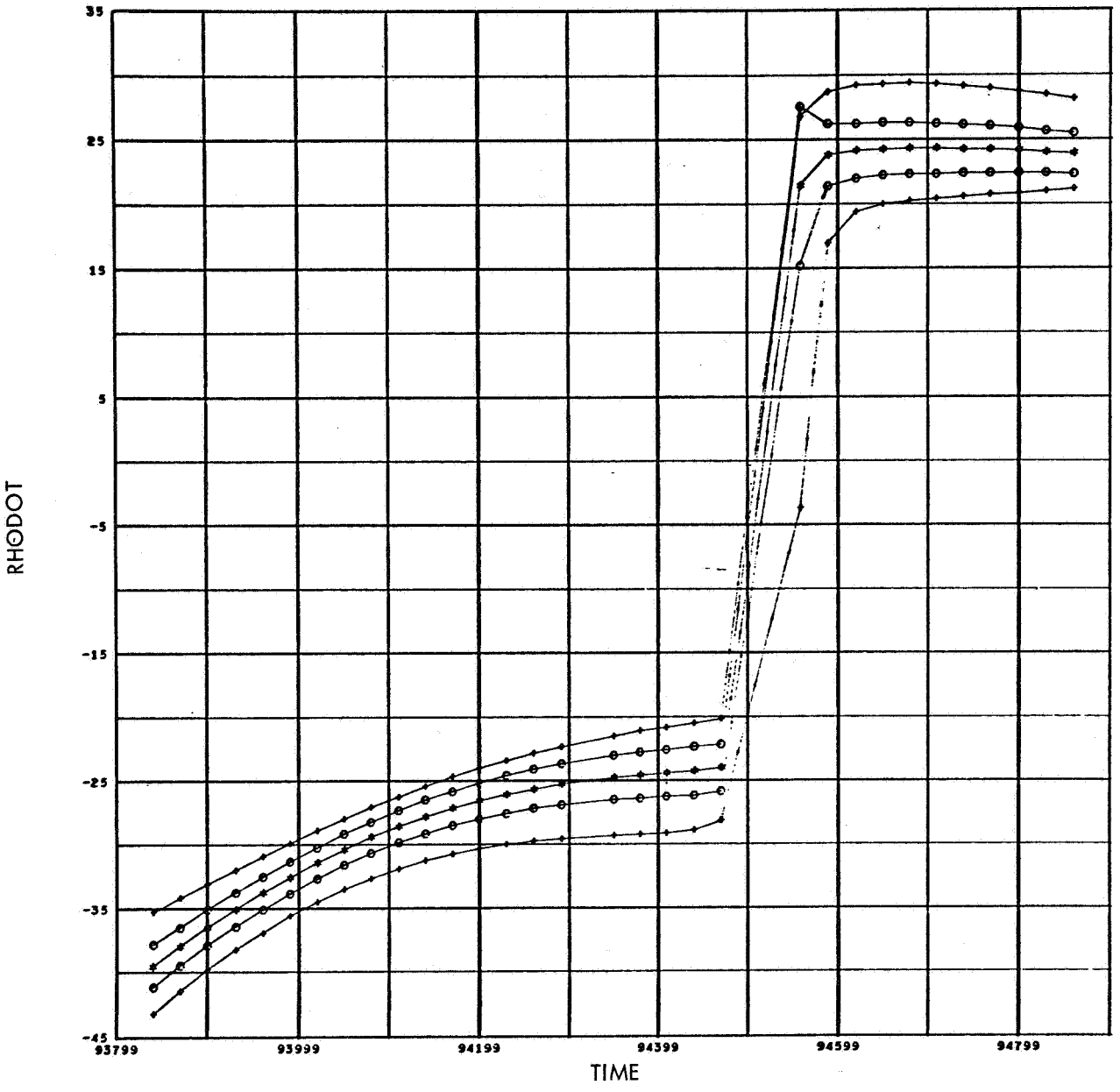

Figure 82. Relative Range Rate with 3 Marks Angle and Range Tracking and Nondiagonal Weighting Matrix from MCC to TPF

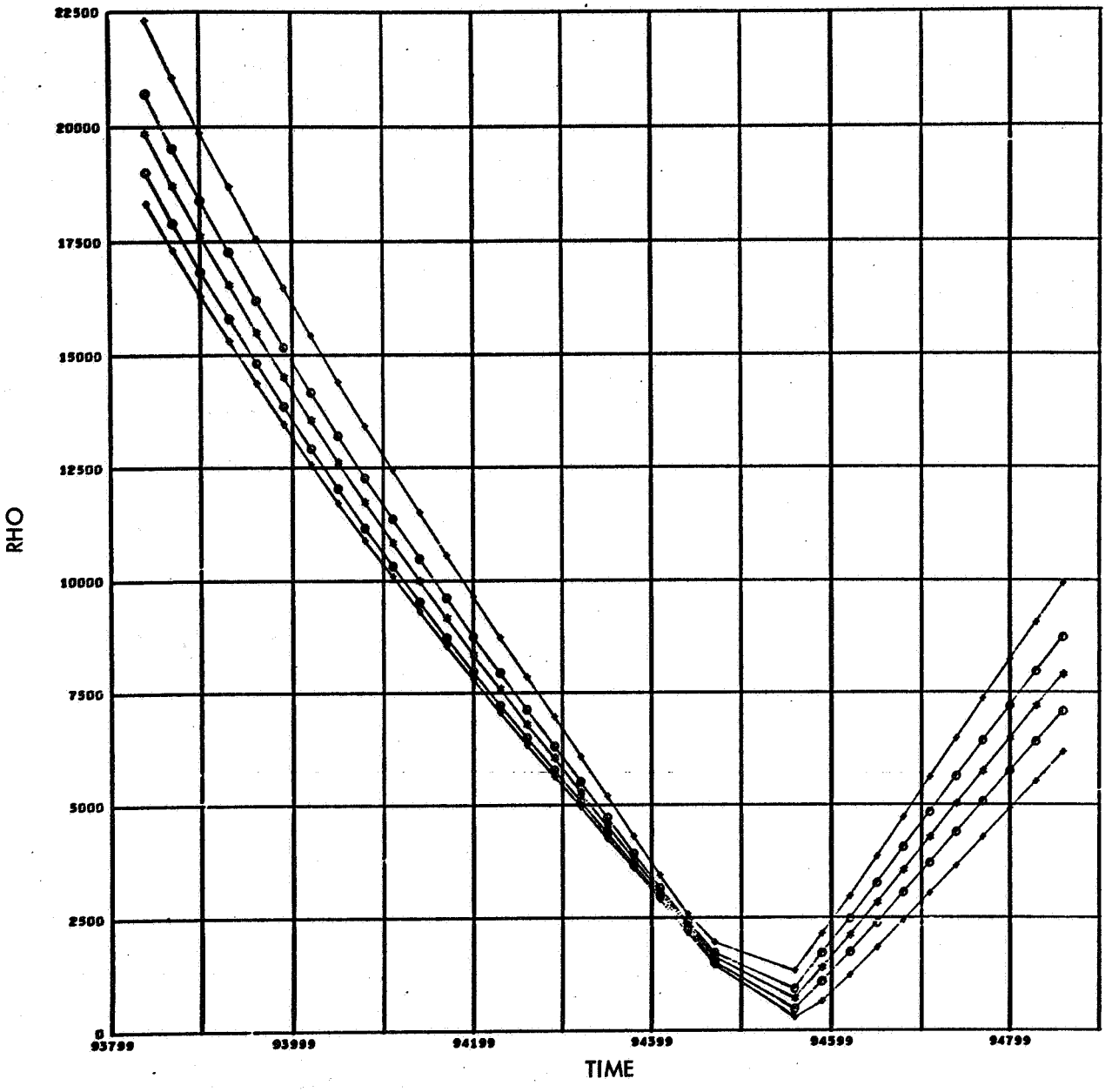

Figure 83. Relative Range with 3 Marks Angle and Range Tracking and Nondiagonal Weighting Matrix from MCC to TPF

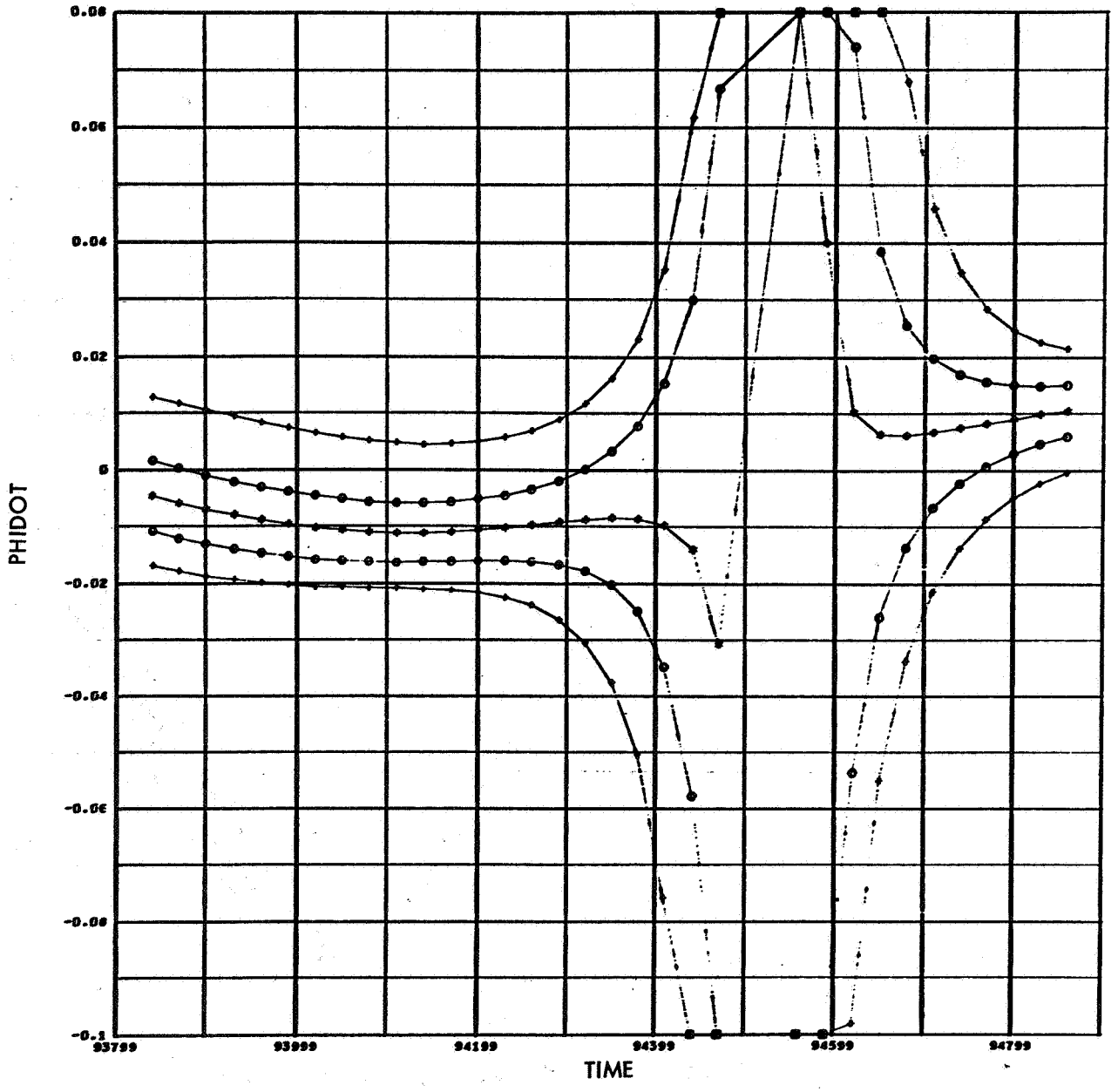

Figure 84. Inertial Inplane Line-of-sight Rate with 3 Marks Angle and Range Tracking and Nondiagonal Weighting Matrix from MCC to TPF

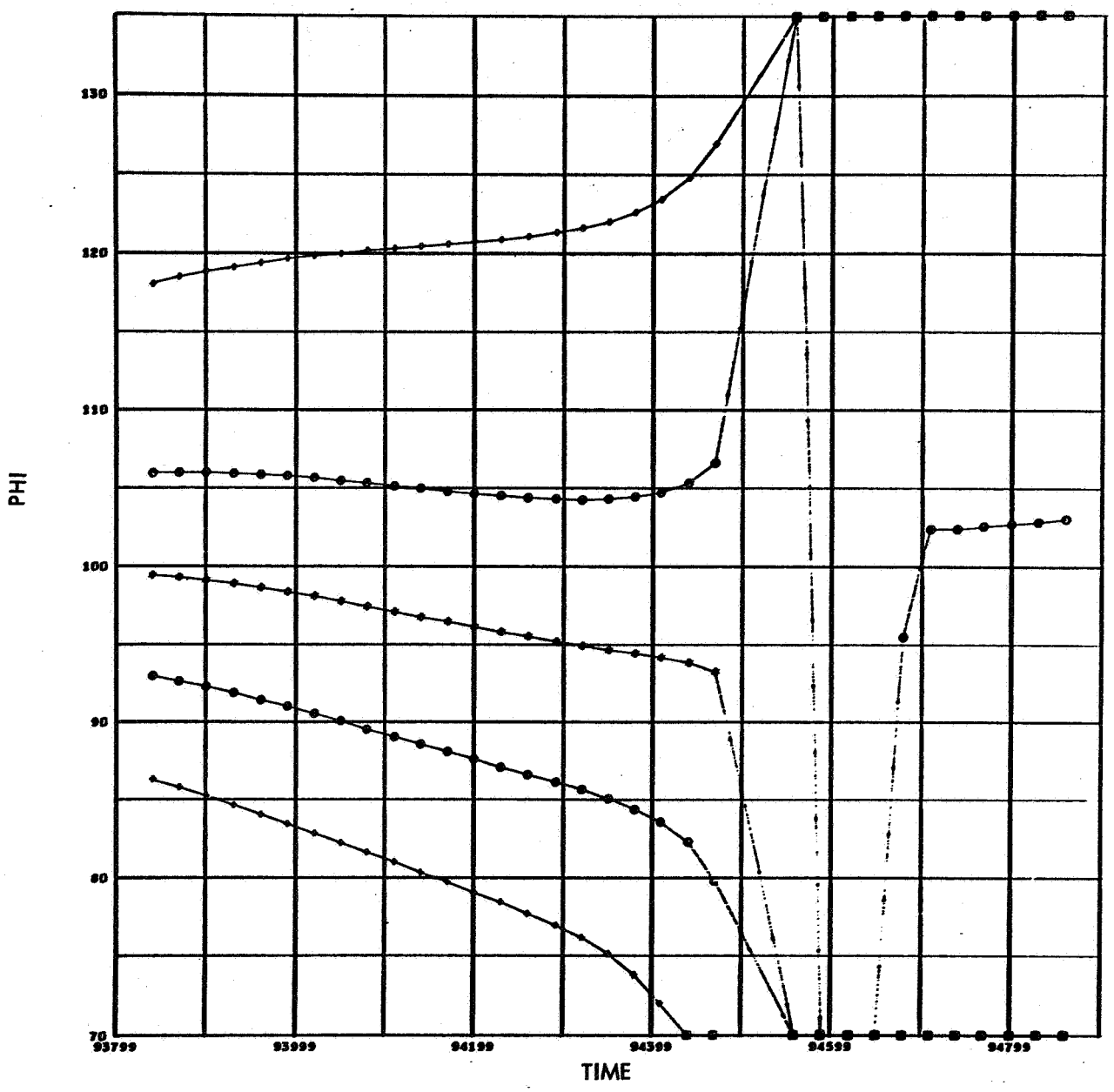

Figure 85. Inertial Inplane Angle with 3 Marks Angle and Range Tracking and Nondiagonal Weighting Matrix from MCC to TPF

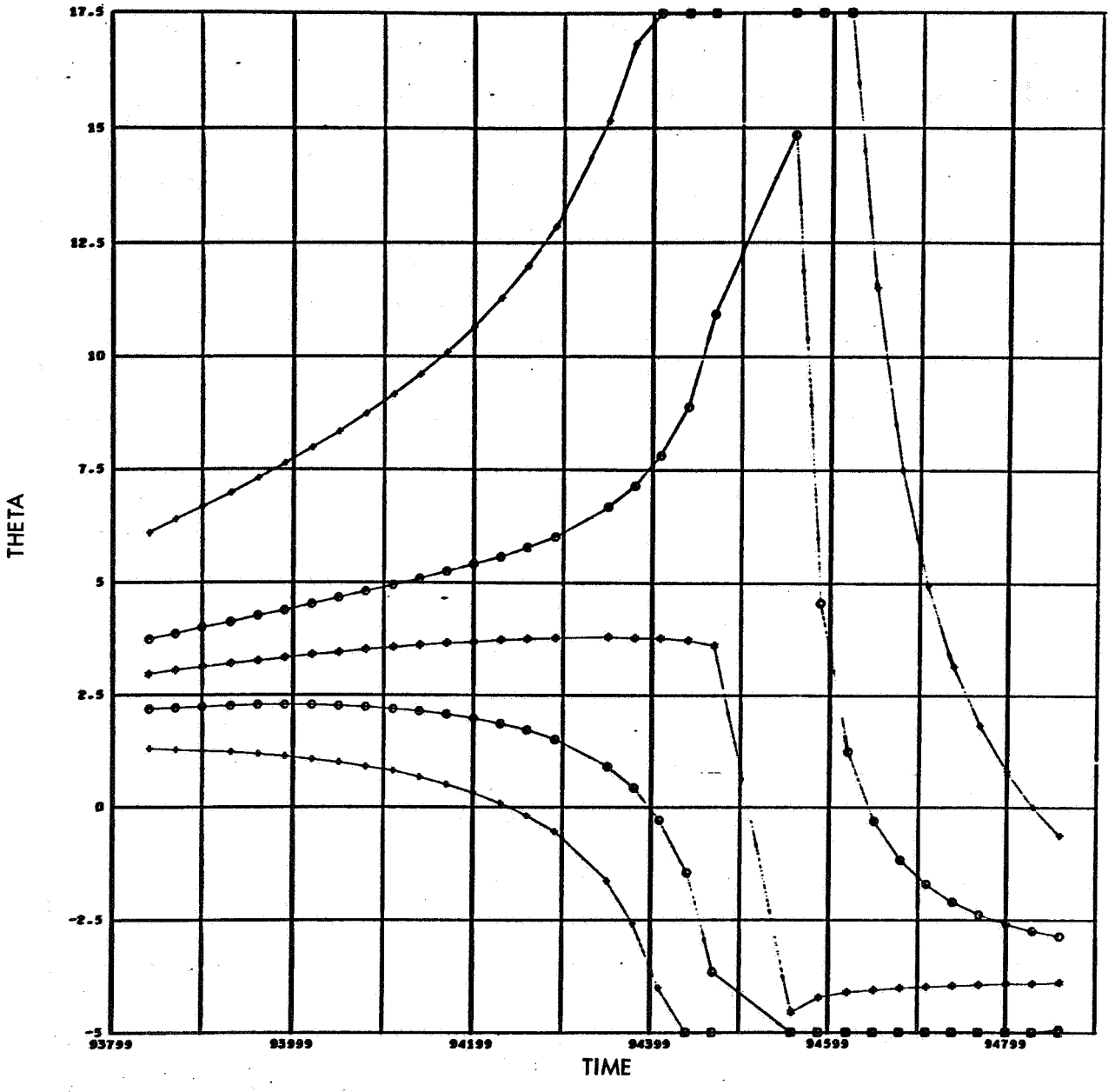

Figure 86. Out-of-plane Angle with 3 Marks Angle and Range Tracking and Nondiagonal Weighting Matrix from MCC to TPF

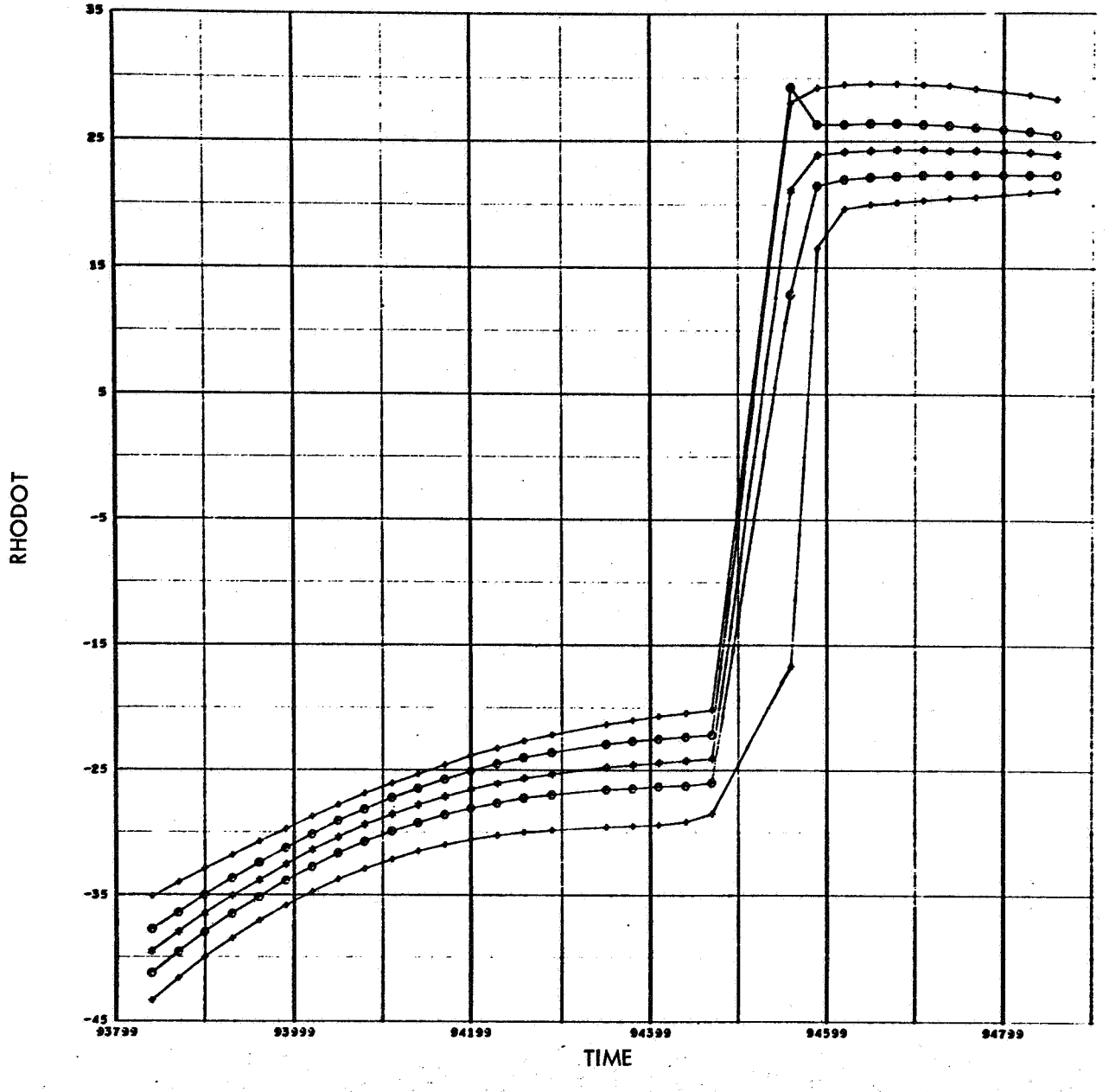

Figure 87. Relative Range Rate with 6 Marks Angle and Range Tracking and Nondiagonal Weighting Matrix from MCC to TPF

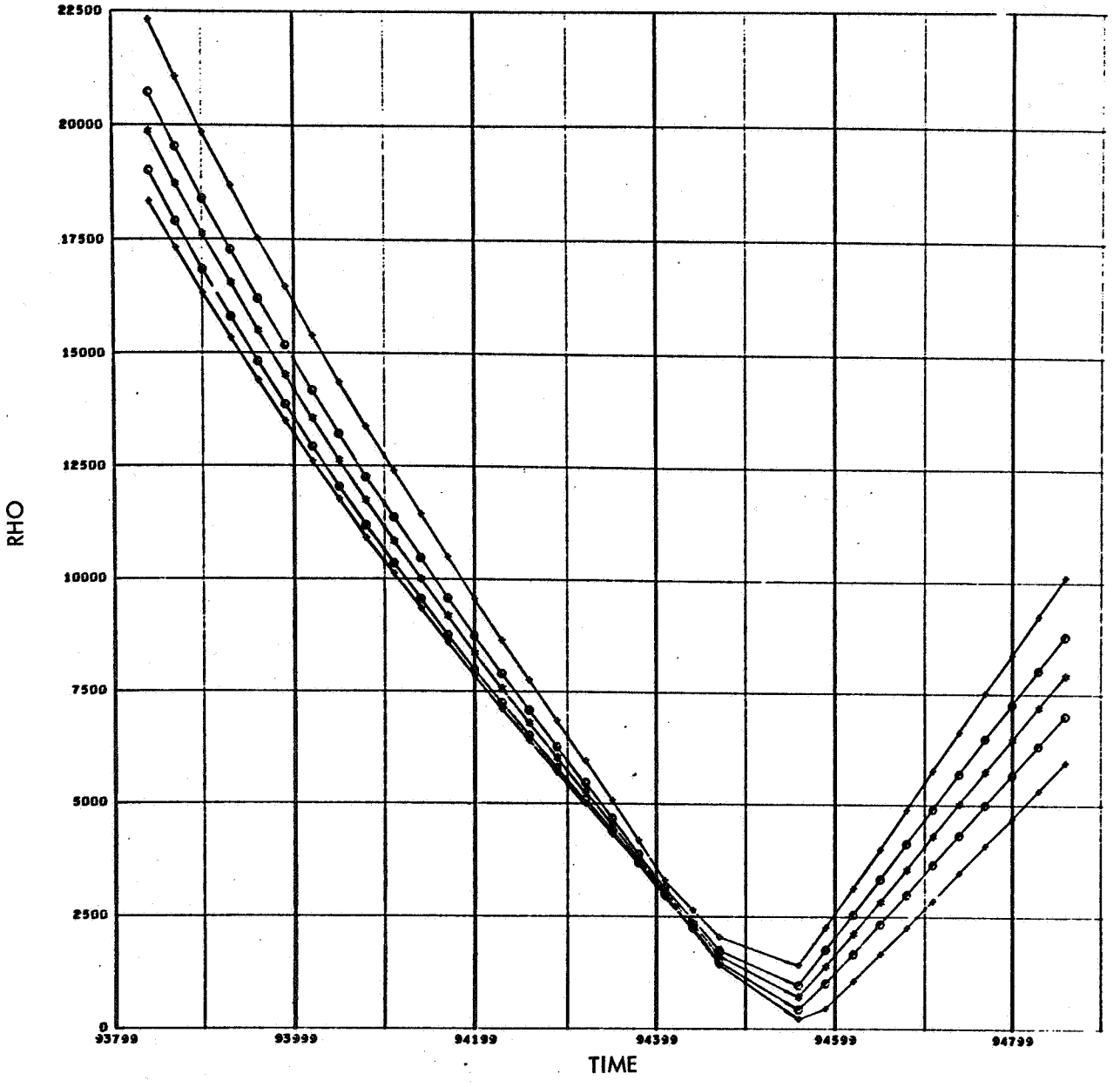

Figure 88. Relative Range with 6 Marks Angle and Range Tracking and Nondiagonal Weighting Matrix from MCC to TPF

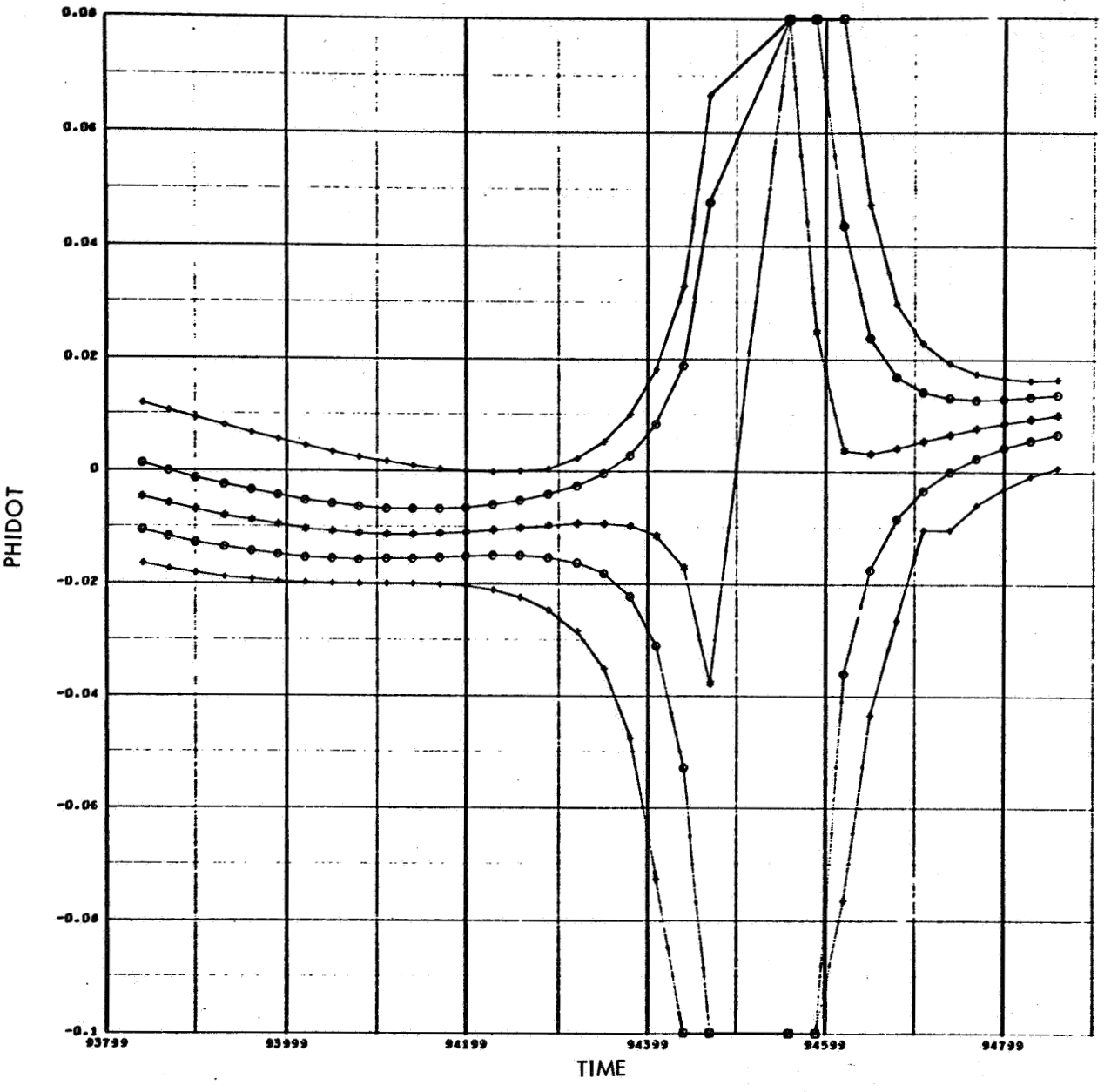

Figure 89. Inertial Inplane Line-of-sight Rate with 6 Marks Angle and Range Tracking and Nondiagonal Weighting Matrix from MCC to TPF

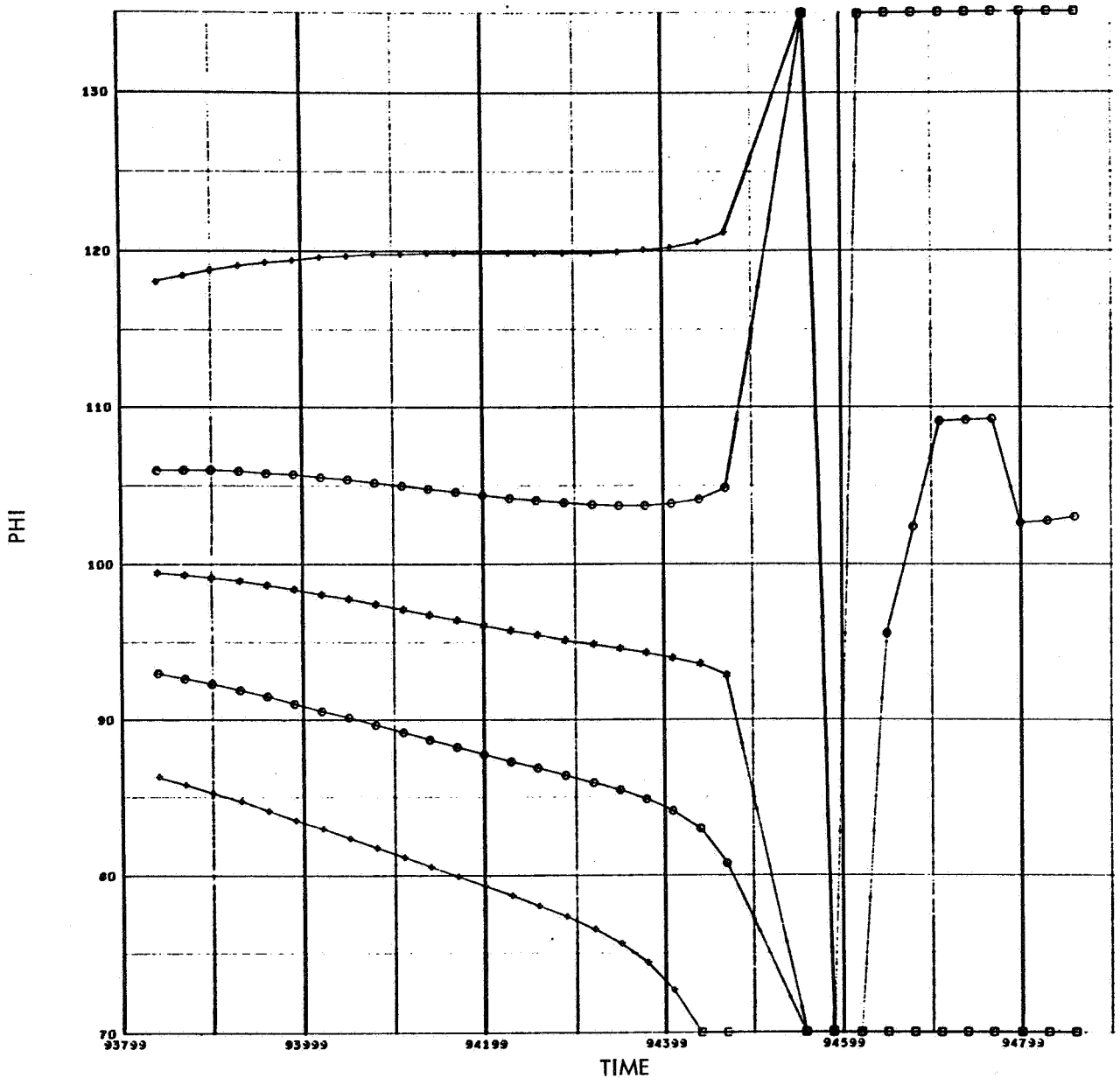

Figure 90. Inertial Inplane Angle with 6 Marks Angle and Range Tracking and Nondiagonal Weighting Matrix from MCC to TPF

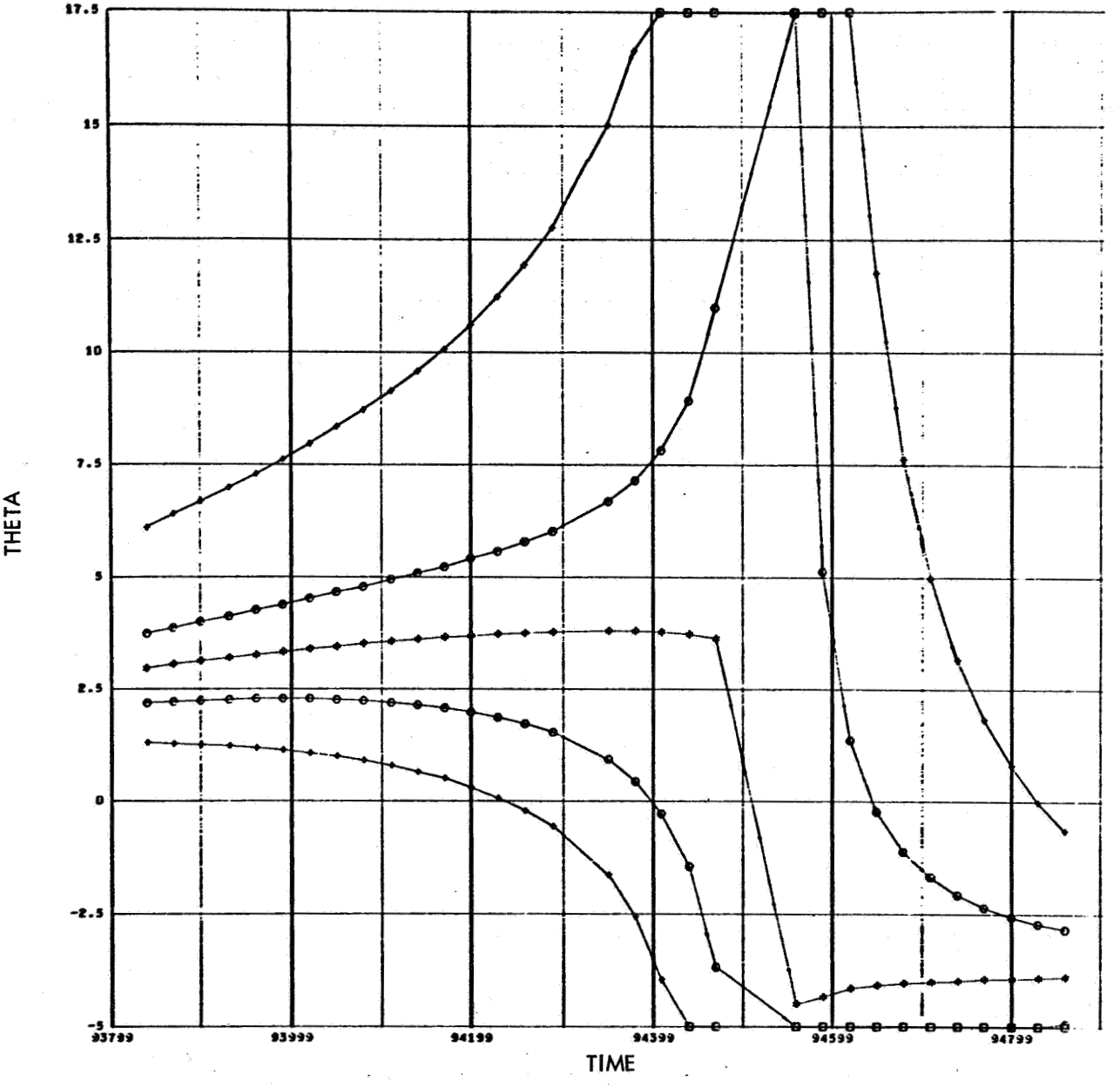

Figure 91. Out-of-plane Angle with 6 Marks Angle and Range Tracking and Nondiagonal Weighting Matrix from MCC to TPF

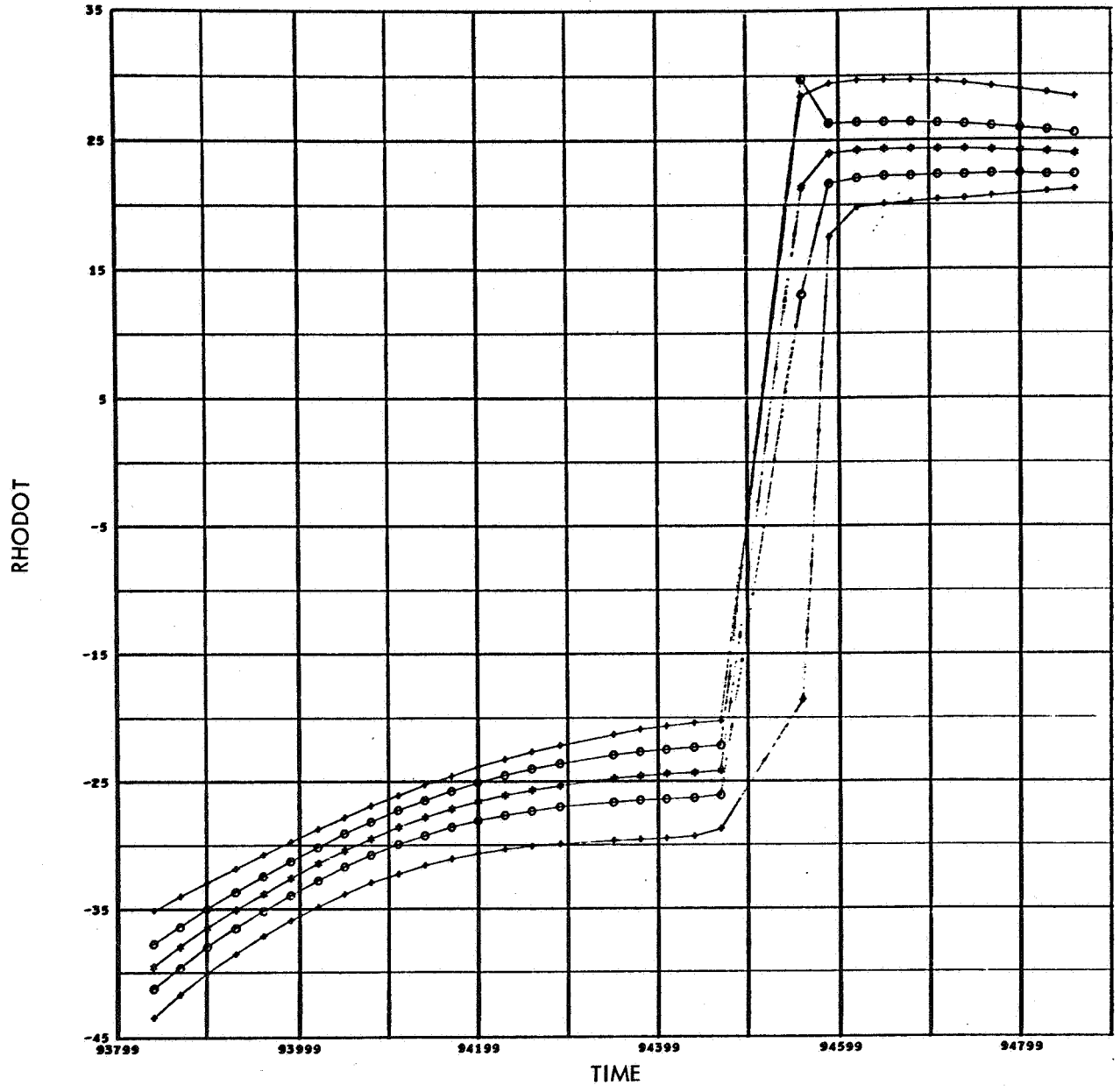

Figure 92. Relative Range Rate with 9 Marks Angle and Range Tracking and Nondiagonal Weighting Matrix from MCC to TPF

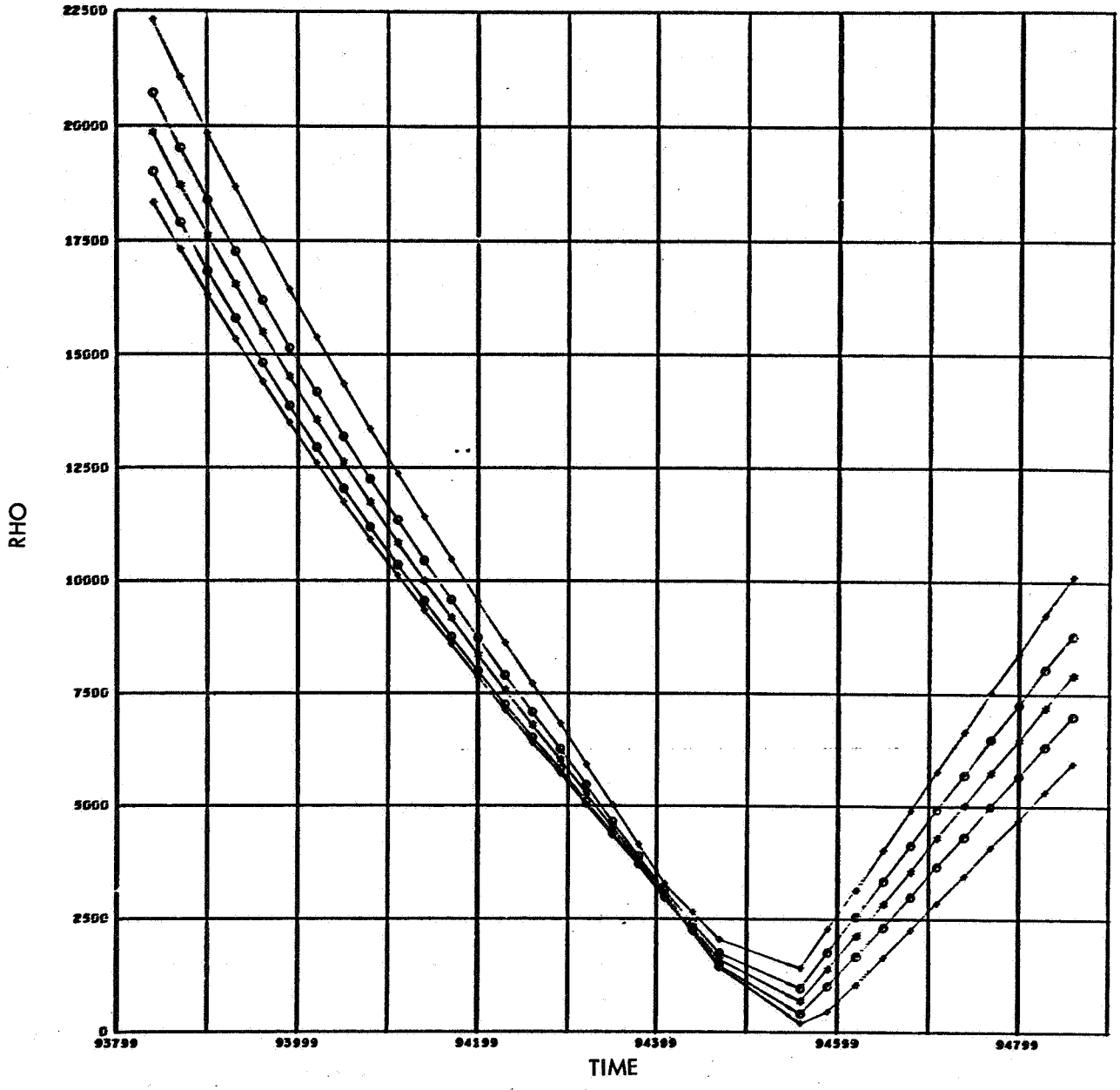

Figure 93. Relative Range with 9 Marks Angle and Range Tracking and Nondiagonal Weighting Matrix from MCC to TPF

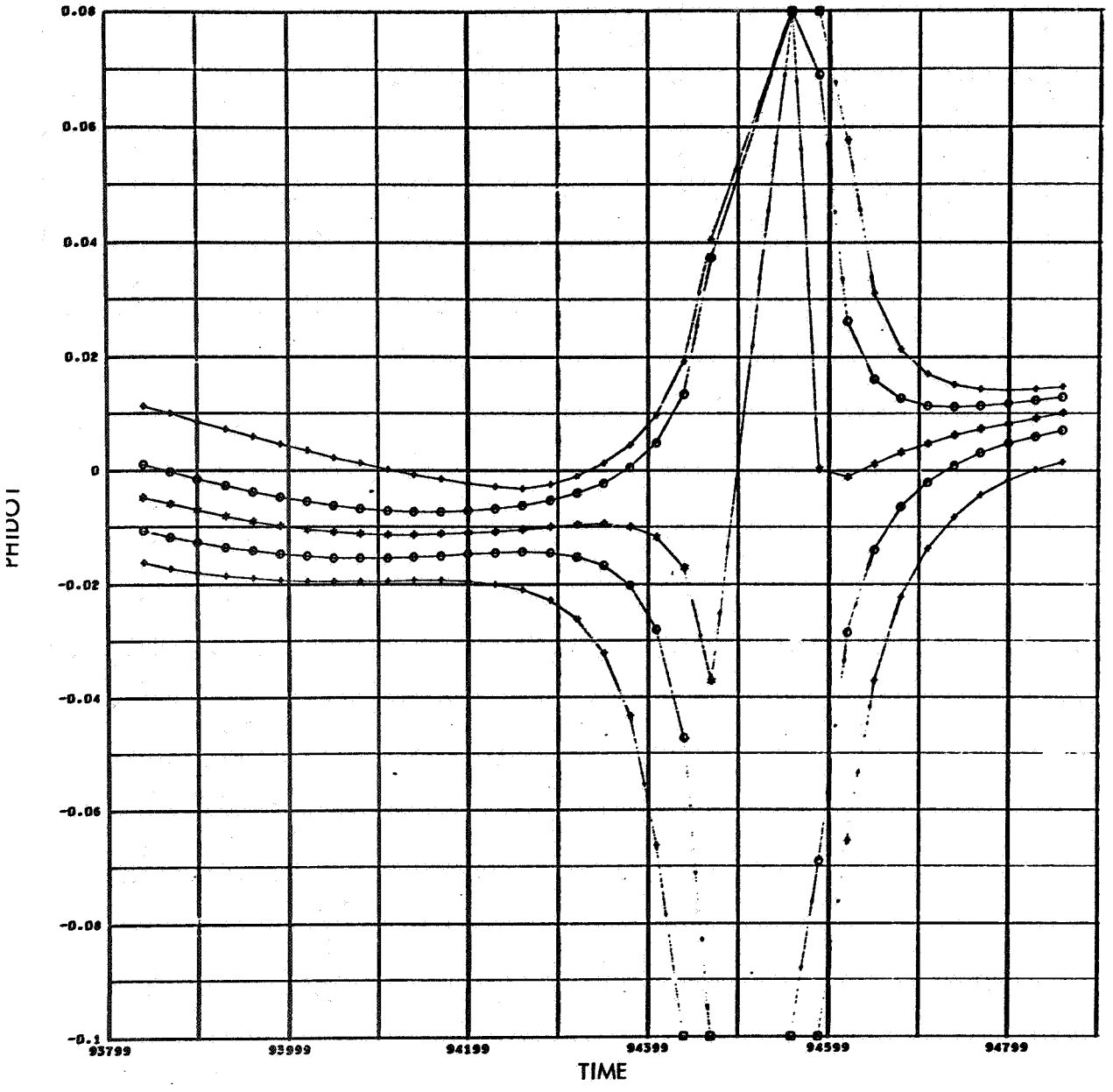

Figure 94. Inertial Inplane Line-of-sight Rate with 9 Marks Angle and Range Tracking and Nondiagonal Weighting Matrix from MCC to TPF

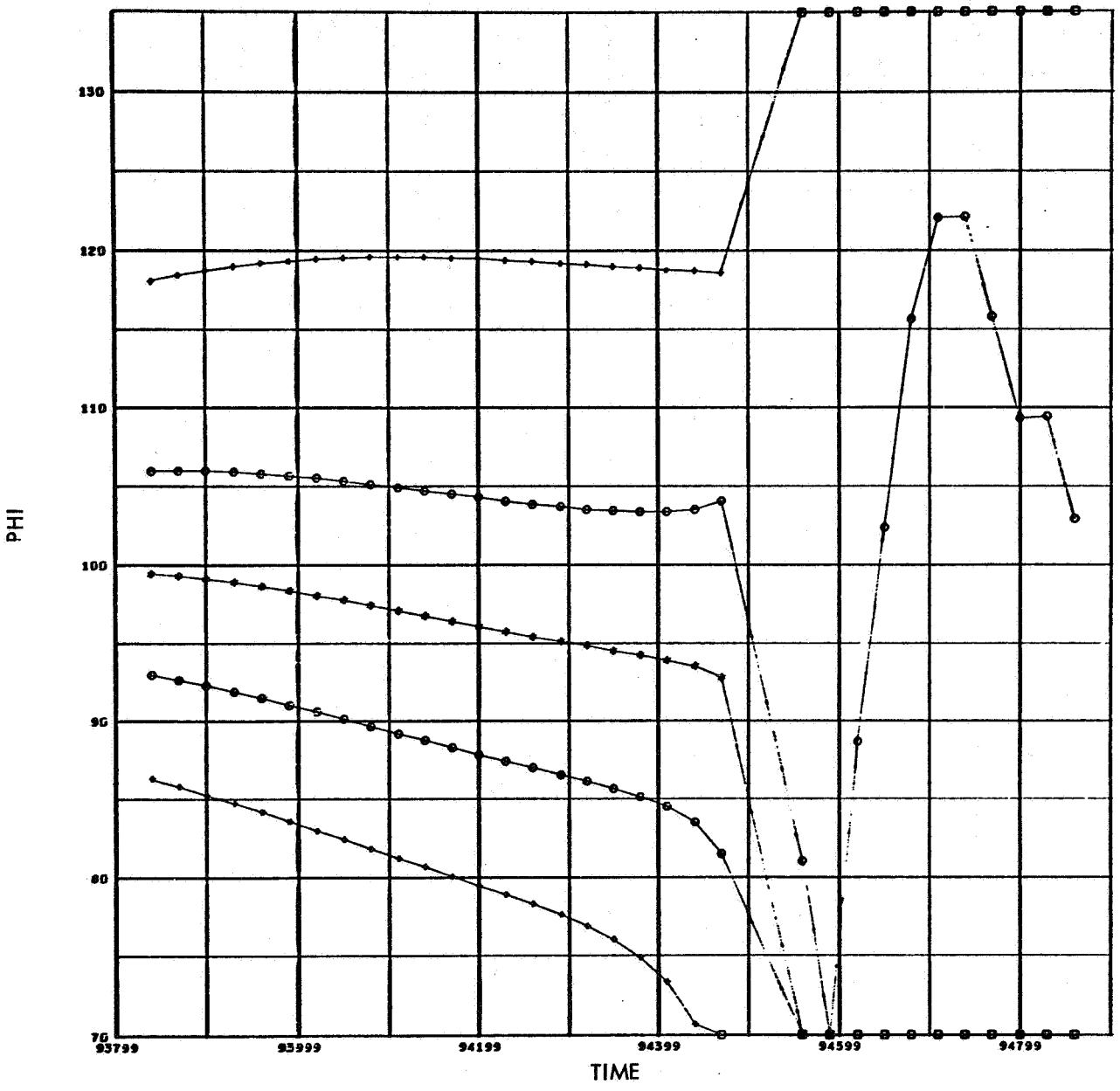

Figure 95. Inertial Inplane Angle with 9 Marks Angle and Range Tracking and Nondiagonal Weighting Matrix from MCC to TPF

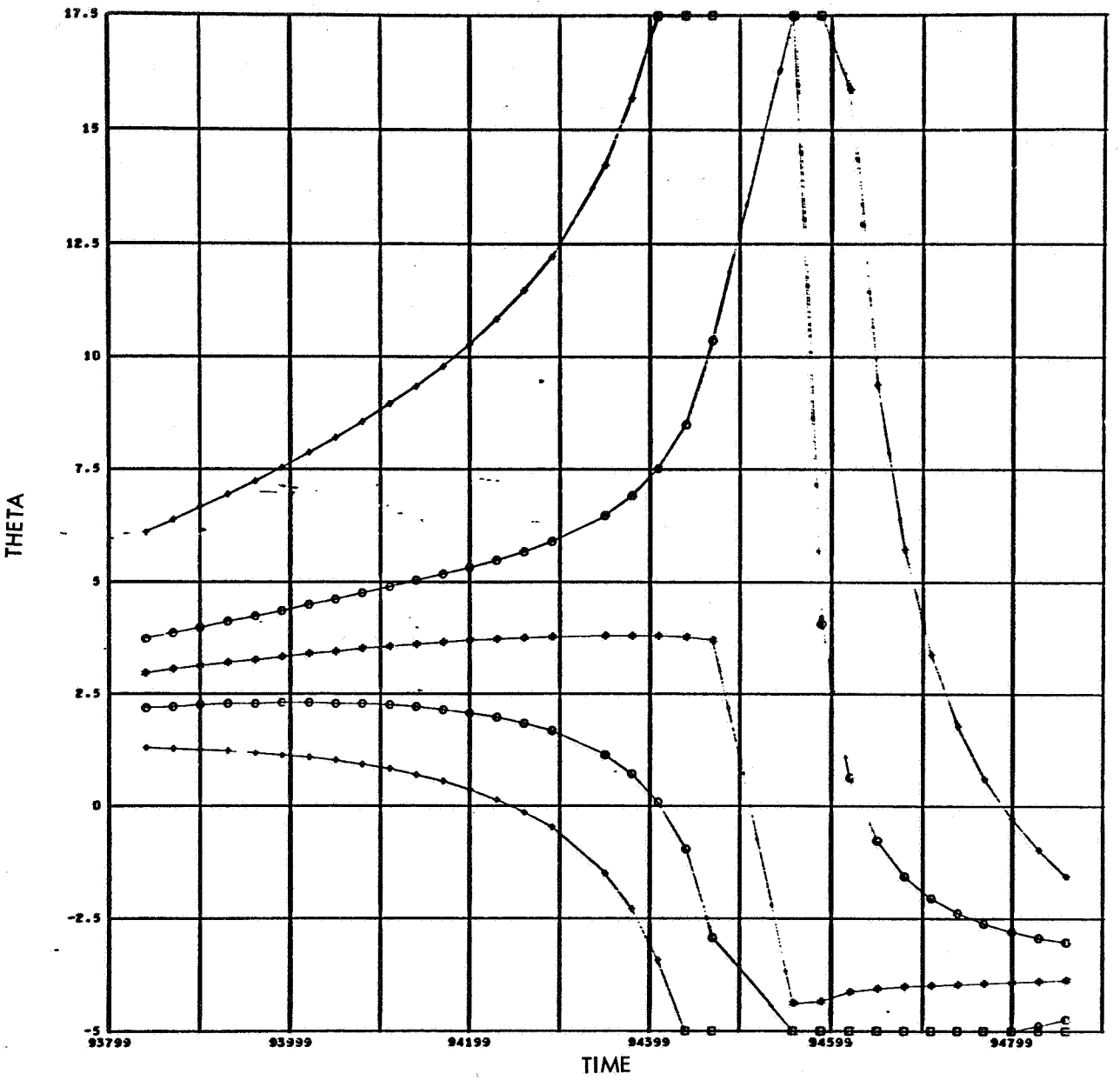

Figure 96. Out-of-plane Angle with 9 Marks Angle and Range Tracking and Nondiagonal Weighting Matrix from MCC to TPF

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1. V. G. Schock, Jr., "Technical Approach to Navigation Parameter Study, Task A-105. 4," TRW IOC No. 3422. 5-51, 11 August 1967.

2. Systems Evaluation and Guidance and Analysis Departments, " Description of PROC Statistical Processor Program," TRW Note No. 67-FMT-501, TRW 05952-H171-R0-00, 1 July 1967.

3. "Task Agreement Amendment for Evaluation of the Apollo Onboard Navigation Formulation and Procedures," Task No. MSC/TRW A-105, Amendment No. 4, 17 July 1967.